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Editorial

WHY SHOULD THE WHIM OF PREJUDICE OF A WARD BOSS CONTROL THE RIGHT OF THE SKILLFUL PHYSICIAN IN THE PRACTICE OF MEDICINE

Medicine is a science so great that unscientific adventures on the part of the ignorant laity are pathetically humorous. Through the centuries men have labored to discover the hows and whys of the ills of the body. Due to medical discoveries, many diseases have become extinct. Many known diseases are under control. Medical progress lessened the death record in the world war to only a fraction of what it has been in previous conflicts.

Looking these accomplishments in the face, it is ridiculous for cobblers, bank presidents, school teachers, stenographers, bookkeepers, street car conductors, plumbers and other allied trades and professions and the citizenry at large to presume to tell doctors how medicine should be practiced. What doctor dare tell a plumber how to lay a gas pipe, or a bookkeeper how to find his cash shortage?

There is an army of human parasites seeking to get on the pay roll of the state or government that finds the shortest and easiest route to accomplish this end is to inaugurate social welfare movements and propaganda intended to create "new positions" and that will give them supervision of the health welfare of the people, ever an interesting topic.

Medical men spend years in preparing for the practice of medicine. It is ridiculous to presume that after a man has spent twenty thousand dollars in money and devoted his time up to twenty-eight years of age or more to prepare himself for the practice of medicine that the knowledge he would acquire in his studies and clinical training would be inferior to some social uplifter's medical education, gained largely from correspondence course booklets or abridged school instruc-

tion. In these days anyone can "learn to be" almost anything through the media of doubtful advertisements and "mail order" instruction in science or art.

There has been an attempt in some states to limit the fee that a doctor might charge for a prescription. If the fee of a doctor can arbitrarily be made one dollar, speaking as an example, for a prescription to relieve pain there is no telling to what extent the principle can be carried. The recent attempt along this line is illustrative of unsound reasoning. A doctor, for instance, might spend several days in patient clinical and scientific investigation of a patient, bringing into play the most modern methods and scientific instruments and apparatus in order to make a correct diagnosis, spending perhaps several hundred dollars' worth of time and indeed an outlay of a large amount of money. If at the end of his investigation he saw fit to write a prescription his fee could be only one dollar. A law of such a character would be unreasonable and would destroy initiative and pauperize the profession, and eventually reduce available assistance for the sick and ailing to the minimum of capable and responsible skill.

ILLINOIS STATE MEDICAL SOCIETY'S FIFTH COUNCILOR DISTRICT PICNIC —EVERYBODY WELCOME

September 12, 1928

The Fifth Councilor District will hold a picnic at Old Salem Chautauqua Grounds, September 12. The Chautauqua Grounds are at Petersburg (Menard County), reached by the Peoria-Springfield hard road. There is a large pavilion, so the picnic will be held regardless of weather.

Dr. George W. Crile, Cleveland, Ohio, will deliver the address on Surgery.

Dr. John Phillips, Cleveland, Ohio, will deliver the address on Medicine.

There will be a round-table conference of the county societies of the Fifth District, addressed by the State Secretary, Dr. Harold M. Camp, at one o'clock. This will be followed by the program of addresses.

A fish dinner will be served, cafeteria style, following the program. Reservations for dinner should be sent as early as possible to Dr. John R. Neal, Springfield, Chairman of the Committee on Arrangements. This invitation is extended to all Doctors, their families and friends, throughout the State. It is expected that all the officers and councilors of the State Society will be present.

The Chautauqua Grounds are adjacent to New Salem State Park, which composes the original buildings that were present during the time of Abraham Lincoln's home at New Salem, including the old store and the cottage of Ann Rutledge, which forms one of the most interesting chapters of Lincoln's life. The picnic was located at this place that the Doctors, with their families, may have the wonderful opportunity of visiting this, one of the most historic spots connected with the life of Abraham Lincoln, and considered one of the most beautiful in the State.

ILLINOIS MAN MADE PRESIDENT ELECT OF A. M. A.

Dr. Malcolm LaSalle Harris of Chicago, was made president-elect of the A. M. A. in June, 1928. Much time has been devoted by Dr. Harris to solving both economic and scientific problems confronting the profession. Dr. Harris has been connected continuously with the official family of the A. M. A. since 1901. He served as trustee for 15 years. For a longer period of time than that Dr. Harris was chairman of the judicial council. In this latter capacity the president-elect wrote practically all the judicial decisions that have come before the A. M. A. for solution. Many of these adjudications would do credit to the minds of the best legal luminaries of the American Bar. Dr. Harris' election to the head of the A. M. A. is at best only a partial recompense to him for the time, labor and mentality he has expended without cavil for the benefit of organized medicine.

For those unfamiliar with Dr. Harris' life this brief biography may be of interest:

Malcolm LaSalle Harris was born June 27, 1862, in Rock Island, Illinois, the son of Samuel G. and Frances Green Harris. His early education was received in the public schools of Iowa and his medical education at Rush Medical College, from which he received the degree of doctor of medicine in 1882. Dr. Harris has practiced medicine continuously in Chicago since his

graduation, teaching in the Cook County Hospital, Chicago, and as professor of surgery at the Chicago Policlinic. Following reorganization of the American Medical Association in 1901, Dr. Harris became a member of the House of Delegates. Since that time he has been seated in the House as a delegate, as a member of the Board of Trustees, or as chairman of the Judicial Council. He was a member of the Board of Trustees from 1903 to 1918 and has been a member of the Judicial Council and its chairman since 1918. As a surgeon Dr. Harris has been honored with membership in the International Surgical Association, the American Surgical Association, the Western Surgical Association and the American Association for Clinical Surgery. He has been president of the Chicago Medical Society, the Chicago Surgical Society, the Chicago Pathological Society and the Western Surgical Association, and has held other positions of importance in both county and state societies. His contributions to medical literature include the translation and editing of Braun's "Local Anesthesia," and contributions to the Oxford, Keen's and Bryant's Systems of Surgery, as well as many contributions not only in surgery but also in the field of medical education, and particularly of medical economics to various periodicals.

Malcolm LaSalle Harris, M. D.
President-Elect of the American Medical Association

ANOTHER STATE MEDICAL SOCIETY PREPARING ITS MEDICAL HISTORY

Following the example set by Massachusetts and Illinois nearly a dozen state medical societies are at present engaged in writing the medical history of their respective states. Failure to earlier record the achievements of the great men who made medical history in this country during the formation period of our history is a sad reflection of the respective state societies.

The latest addition to the list of state societies to attempt the recording of its medical history is Louisiana. The August edition of the *New Orleans Medical & Surgical Journal,* the official

organ of the Louisiana Medical Society, has the following:

HISTORY OF THE LOUISIANA STATE MEDICAL SOCIETY

The history of the Louisiana State Medical Society, made possible by a special act of the House of Delegates, is progressing rapidly and favorably under the able editorial guidance of Dr. Rudolph Matas. For the past three months Dr. Matas has had working under his direction a Secretary-Librarian who has already compiled a great many interesting and important data. The work will progress more rapidly and could be accomplished in much quicker time if the cooperation of the parish and district society secretaries was more wholehearted than it is. Considerable difficulty has been experienced in securing information from these sources. It is hoped that the Secretaries will appreciate that much of the worth of the volume will necessarily have to depend upon the aid that they can and will give.

A discouraging feature, which it is believed is due entirely to tardiness rather than to unwillingness, is the small number of prospective subscriptions. Less than one-third of the subscriptions which will make the work a financial success have been received. It is most earnestly hoped that the men who intend to subscribe to this interesting history of the activities of the Society will send in their subscriptions at the earliest possible moment. It will hearten and encourage the Committee materially to know that their work is appreciated.

THE AMERICAN MEDICAL ASSOCIATION MEETING AT MINNEAPOLIS

Awakening of the medical profession to national economic situation of physicians was evidenced by work at the June meeting of the A. M. A.

The medical profession may well congratulate itself upon the results of the Minneapolis session of the A. M. A.

Much was accomplished. Results of the Convention may in all truth be considered a continued triumph of the ideals of medical practice.

From the results of the Minneapolis meeting it is apparent that throughout the United States there is an awakening of the medical conscience to the economic evils menacing the future stability of medical practice.

It must be remembered that this conscience can not content itself with mere awakening. The profession must be roused to action. While a peril sensed is safer than a peril ignored, the way of safety lies only in a peril combated and conquered.

Reflection upon the ideals at stake before the Minneapolis session and that were upheld through the recent elections, shows how dear these ideals are held by the profession at large. There must, however, be a decided loyalty through personal and individual activity on the part of every reputable physician throughout the country if these ideals are to be maintained. The hour of "letting George do it" is past. It continues to be the duty of every doctor in the country to assist the heads of local, state and national organizations to make the country safe for the medical profession and its unselfish ministration to the general public and to civilization by gradual reduction and complete destruction of those economic evils, accruing from lay ignorance and that have not only had the profession by the throat, but are planning an even closer grip. To checkmate this proposed evil extension of the sphere of influence of these national malefactors demands more than a delegate's vote at a convention. It is requisite that physicians throughout the country shall back up by daily action, and continuous civic enterprise the ideals and principles to which the profession's leaders continue to be commended.

For those who were not at Minneapolis it may be interesting to know that:

Registration was 4,876.

Section meetings, for which adequate halls conveniently located were provided, were well attended and the programs were good.

Diagnostic clinics on Monday and the clinical lectures on Tuesday aroused much favorable comment.

Scientific Exhibit and Technical Exhibit were up to the highest standard of previous years.

The House of Delegates handled the business before it expeditiously and gave careful attention to every item. The reference committees performed their duties splendidly, their reports were submitted promptly, and showed that ear-

nest and intelligent consideration had been given to all matters referred to them.

All that was done at the Minneapolis Session was done "to promote the science and art of medicine and betterment of public health" and to advance the best interests of the medical profession.

Figures evidence that the enrolled membership on April 1 was 96,443, an increase over last year of 2,191. This, of course, represents the total membership of the several constituent state associations. The gain in Fellowship during the year was 1,597. There is now a total Fellowship of 62,487. This, as is well known, represents that portion of our membership which voluntarily become a part of the Scientific Assembly of the Association by the payment of an annual fee of $5.00. For this payment, as is also well known, the payer receives *The Journal of the American Medical Association*, quite the most valuable publication in the medical world. California, Illinois, New York, Massachusetts and Pennsylvania lead in Fellowship membership.

The Scarcity of Doctors in Rural Communities received unusual and extended consideration. Dr. Jabez N. Jackson acknowledged the existence of a shortage of the sort, but insisted that there were ample economic reasons therefor, and that the medical profession could not be blamed and could not be expected to correct the situation at once. He pointed to the fact that the source of income to the medical profession through a large variety of diseases such as typhoid fever and malaria, had helped to drive doctors from rural to urban communities.

In the address of the Speaker, Dr. F. C. Warnshuis, it was suggested that the annual speaker's address to the House of Delegates should contain no general recommendations concerning policies of the Association but that it should deal with the affairs and procedures of the House of Delegates. The Speaker urged that careful consideration should be given, and thorough review of matters submitted should be made, by reference committees, and that there should be no generalized approval of referred reports and resolutions.

The President, Dr. Jabez N. Jackson, reviewed vital changes affecting the practice of medicine, referring especially to the development of specialization and institutional care and to the exploitation of the physician in the abuse of medical charity. He offered a recommendation to the effect that there should be an investigation and classification of medical charities, either through a special committee of the Association or through the Judicial Council.

The President-Elect, Dr. William Sydney Thayer, delivered a brief address in which he called attention to the present tendency toward overorganization of the profession. Dr. Thayer paid tribute to the work of Dr. Hideyo Noguchi, lately deceased.

The recommendations of the Reference Committee were adopted by the House.

MEDICAL EDUCATION AND HOSPITALS

The report of the Council on Medical Education and Hospitals indicated that the Council plans to devote considerable attention for the next several years to a survey of hospitals in the United States. The Chairman of the Council, in presenting the report, indicated that the difficulties of appraisal are recognized and are being considered by the Council. The report also dealt in some detail with the appraisal of clinical laboratories.

The Reference Committee called attention to the fact that the appraisal of medical institutions and agencies in so extensive and so populous a country as this is a vast undertaking and urged that the policy of the Council should be carried out with great caution and in cooperation with constituent state medical associations and state authorities.

The Reference Committee strongly endorsed the recommendation of the Chairman of the Council on Medical Education and Hospitals urging that the practice of medicine is not the proper function of corporations and that the American Medical Association should use its utmost endeavors to stop this growing abuse. The Committee endorsed the substance of a resolution offered by Dr. Southgate Leigh of Virginia to the effect,

(1) That it would be desirable that medical students should graduate and enter practice at an earlier age than at present;

(2) That the plan of covering the medical course in three years of four quarters instead of in four years of three quarters, or any other adequate plan for reducing the

length of the medical course, is greatly to be desired.

(3) That the medical course is overcrowded with details and with detailed consideration of specialties and would be improved by less crowding with a course confined more nearly to the essentials, and that efforts to this end should be made.

REPORT OF OFFICERS

The Reference Committee offered its approval of the declaration of the President that "the time has come when no institution or clinic should permit its attending physicians to be imposed on; and when, whatever the social or other advantage to the physician in the clinic, he should not be permitted to contribute to what is a gross injustice to the profession as a whole."

The Committee also approved the principle of the President's recommendation for the investigation and classification of medical charities through the Judicial Council.

The Reference Committee especially approved of the suggestions of the President-Elect that in the multiplicity of independent medical societies there exists a danger of diverting and dissipating the fundamental strength of organized medicine "as typified in the composition of our county, state and national organizations."

The recommendations of the Reference Committee on Reports of Officers were adopted by the House of Delegates.

REPORTS OF BOARD OF TRUSTEES AND SECRETARY

The Reference Committee on the Reports of the Board of Trustees and Secretary endorsed that part of the Secretary's report relative to the multiplicity of existing independent medical organizations whose work, in many instances, parallels the work of the component county and constiuent state medical associations and, to some extent, tends to interfere with the successful operation of component county medical societies and constituent state medical associations of the American Medical Association.

Concerning the meetings of hospital staffs, the Committee offered the following statement:

The committee deprecates especially the compulsory multiple scientific meetings of hospital staff organizations. These have tended to limit to small groups the dissemination of medical information and the discussion of medical problems, interfering thereby with the work of organized medical societies. Organization is necessary in order to obtain unified action of the medical profession in various communities. We feel that the need is greater than ever for general discussion of medical problems and for the dissemination of information associated with the specialties to all physicians. Only in this way can the general practitioner keep abreast of modern medicine.

Your reference committee suggests that the staff meetings of hospitals be devoted preferably to executive discussions of problems relating to hospital economics and records, and that members of the American Medical Association make special efforts to stimulate interest in, and the development of, scientific medicine in the regularly organized county medical societies.

This part of the Committee's report evoked extensive discussion but was adopted by the House as presented by the Committee.

The recommendations offered by the Secretary concerning relief for needy physicians, which recommendations were submitted in compliance with specific instructions received from the House of Delegates, were approved by the Reference Committee with the recommendation that each constituent state medical association should be left to follow its own plan for the relief of needy physicians.

The recommendation of the Reference Committee was that the Board of Trustees should appoint a commission of five to consider the whole situation, including the various solutions that have been proposed, and to determine the responsibility of the American Medical Association.

The report of the Reference Committee stressed the importance of the periodic examination; commended the work of the Council on Pharmacy and Chemistry and made an urgent appeal for the support of this Council by the profession at large; approved the work of the Council on Physical Therapy, especially in providing for the dissemination of information concerning the methods of physical therapy among the profession and commented most favorably on the work of the Bureau of Investigation.

Efforts of the Bureau of Legal Medicine and Legislation toward preventing the extension of

socialized medical practice by the government through the Veterans' Bureau and similar organizations were endorsed by the Committee and the intention of this Bureau to continue its work for legislation giving physicians the right to deduct from income tax returns expenses incurred in attending scientific meetings and in taking graduate courses of instruction, were approved by the Committee. The activities of the Bureau with respect to the status of the physician as an expert witness were also approved.

The Reference Committee expressed appreciation of the report of the Committee on the Grading of Nursing Schools, and recommended that the request for additional appropriations for the use of this committee be referred to the Board of Trustees.

REAPPORTIONMENT OF DELEGATES

On recommendation of the Reference Committee on Reapportionment of Delegates, 775 was established as the basic figure for determining representation of state associations. Under this new apportionment Illinois retains its former number of ten on a ratio of one delegate for each 775 members. Each association with a membership of less than 775 will be represented by one delegate. On this basis, the total membership of the House of Delegates will be 173. California, Florida, New Jersey, New York and Pennsylvania will each gain one delegate, under the new apportionment, while Iowa and Texas will each lose one delegate.

A resolution presented by Dr. John O. Polak of the Section on Obstetrics, Gynecology and Abdominal Surgery provided that the House of Delegates should disapprove of any reduction in the hours allotted to the teachings of obstetrics and should advocate that obstetrics as a major subject be allotted a number of hours equal to those allotted to surgery. In reporting on this resolution, the Reference Committee on Medical Education made the point that the importance of a subject or the amount of work that it constitutes for the general practitioner alone is not a proper measure of the time which should be allotted to the study of that subject. The Committee also felt that definite instructions of the kind contemplated in the resolution to councils and other bodies engaged in working out difficult problems are inadvisable and that freedom and initiative should not be hampered by rigid instruction. The importance of thorough instruction in obstetrics was recognized by the Committee, but its recommendation was that the resolution of Dr. Polak be not adopted.

The report of the Reference Committee on Medical Education was adopted by the House of Delegates.

HYGIENE AND PUBLIC HEALTH

The Reference Committee on Hygiene and Public Health recommended that the House of Delegates reaffirm its endorsement of the plans outlined at a previous session for medical relief in disaster.

With respect to a communication addressed to the House of Delegates by the National Grange concerning the alleged scarcity of physicians in the rural districts, the Reference Committee offered the following resolution, which was adopted by the House of Delegates:

Resolved, That an official reply to the Grange be formulated by the Secretary of the House of Delegates embodying the following thoughts:

1. That the House of Delegates is keenly alive to the problems involved and recognizes that, although there will always be some inadequacy of medical services in sparsely settled communities, improvement of medical services in rural districts is needed.
2. That the problem is being intensively studied by the Commission on Medical Education (already in its fourth year), the Committee on the Cost of Medical Care, the Council on Medical Education and Hospitals, and other bodies.
3. That the problem is fundamentally economic and the solution involves much more than the mere length and costs of medical education.
4. That patience and time are necessary in order to obtain data and evolve methods for solving this problem.
5. That suggestions from the National Grange and information will be welcomed by the House of Delegates and by any of the bodies specially engaged in the study of medical educational and economic problems.

LEGISLATION AND PUBLIC RELATIONS

The following resolution, introduced by Dr. C. J. Whalen of Illinois, was referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, It has come to our attention that students in universities and colleges are being given free medical care without regard to the ability of the individual to pay for the same, therefore be it

Resolved, That the Judicial Council be requested to investigate the matter as to the extent to which this practice prevails.

The Reference Committee recommended that this resolution be referred to the Judicial Council.

The recommendation of the Reference Committee with respect to the report of the committee appointed to secure revision of undesirable regulations under the Volstead Act was to the effect that this committee be continued for one year.

The Committee approved the resolution introduced by Dr. Orrin Sage Wightman of New York providing for the appointment by the Board of Trustees of a Committee on Visual Moving Picture Education.

The recommendations of the Reference Committee on Legislation and Public Relations were adopted by the House of Delegates.

AMENDMENTS TO CONSTITUTION AND BY-LAWS

The Reference Committee on Amendments to the Constitution and By-Laws recommended that the proposed amendment to Section 1, Article 5 of the Constitution, offered by Dr. George Edward Follansbee of Ohio, be made instead an amendment to the By-Laws to be Section 12, Chapter XI, to read as follows:

The House of Delegates shall have the power to expel a member of the American Medical Association or a Fellow of the Scientific Assembly on recommendation of the Judicial Council.

The Committee recommended that aproposed amendment providing that decisions of the Judicial Council should be subject to review by the House of Delegates be rejected.

The recommendations of the Reference Committee on Amendments to the Constitution and By-Laws were adopted by the House of Delegates, except the recommendation concerning the proposed amendment providing for the establishment and disbursement of special funds by sections of the Scientific Assembly which was laid on the table.

The following officers were elected:

President-Elect, Dr. M. L. Harris, Chicago; Vice-President, Dr. W. A. Jones, Minneapolis; Secretary, Dr. Olin West, Chicago; Treasurer, Dr. Austin A. Hayden, Chicago; Speaker of the House of Delegates, Dr. F. C. Warnshuis, Grand Rapids, Mich.; Vice-Speaker, Dr. Allen H. Bunce, Atlanta, Ga.; members of the Board of Trustees, Dr. J. H. Walsh, Chicago, and Dr. A. R. Mitchell, Lincoln, Neb.; members of the Judicial Council, Dr. F. W. Cregor, Indianapolis, and Dr. James B. Herrick, Chicago; member of the Council on Scientific Assembly, Dr. Roger S. Morris, Cincinnati; member of the Council on Medical Education and Hospitals, Dr. Reginald Fitz, Boston.

Portland, Ore., was chosen as the place of meeting for the annual session in 1929.

NURSES ARE PLENTIFUL BUT ARE BADLY DISTRIBUTED

Dr. N. B. Van Etten in Am. J. Nursing, July, 1927, discussing the nurse question, says that nurses are plentiful but are badly distributed; the cities enjoy a surplus but the rural districts show a shortage. The result is that many rural inhabitants cannot get nursing service that they want at any reasonable cost, and many city nurses are not fully employed.

Hourly nursing offers a partial solution for those who require a nurse but cannot afford to pay for full time; it should, if properly organized, be satisfactory also for the nurse. The idea is capable of very great expansion.

There is a weight of evidence to support the opinion that a subsidiary nurse is greatly needed. The weekly rate should not exceed $25.00 and exployment and fees should be regulated by central official registries.

All classes of nursing service, including specialist nurses, should be dispensed through the central registry and this procedure affirmed by law.

Another way to increase the supply of nursing service is through group nursing in hospitals; this is feasible, if an honest attempt is made to put it into execution.

The education of the nurse is now more chaotic than that of any other public servant. The curriculum should be revised and simplified, with the cooperation of physicians, nurses and educators.

GREENE COUNTY ENDORSES DOCTOR SMITH

WHEREAS, Dr. H. W. Smith of Roodhouse, Ill., is a candidate for the legislature, and

WHEREAS, Dr. Smith is a member of our society and esteemed for his ability as a doctor, as well as his qualities as a man, and

WHEREAS, we believe that men of the type of

Dr. Smith should be encouraged to serve the people in public office, Now; therefore be it

Resolved by the Greene County Medical Society in meeting assembled that we hereby endorse the candidacy of Dr. H. W. Smith and urge the people of this the 38 Senatorial District and particularly to give him their cordial support in the coming election, Nov. 6, 1928.

NATHANIEL BUCKLIN, Pres.
W. H. GARRISON, Sec.

UNFAIR COMPETITION OF STATE AND ENDOWED HOSPITALS WITH THE MEDICAL PROFESSION

Among the many hospitals catering to the general public, yet managed for the major benefit of the organizations controlling them, especial attention is called in this issue to the hospital connected with the University of Michigan and the Cornell University Clinic.

Perusal of the appended citations will prove the contention that the medical profession can not continue in existence and compete with endowed institutions, or university hospitals, that are in reality organizations politically controlled and supported by authorized general taxation.

These virile quotations are from *"American Medicine"* and *"The People's Health."*

The University Hospital.—Most medical schools of state universities established hospitals years ago for teaching purposes, but now they are coming to be used by the state for the care of a much larger number of persons than are needed in teaching. The State of Michigan maintains at the University at Ann Arbor an 1,100 bed institution of this kind. Laws of the legislature enacted in 1913 and 1915 make it mandatory upon the hospital to accept patients sent to the institution by the probate judges of the various counties.

Approximately 50 per cent. of patients at this hospital in 1925 were state cases treated at the expense of the county from which they came or of the state; 50 per cent. came of their own volition; of these, about one-half were persons who could "truthfully sign an affidavit that they were unable to pay the usual minimum fee charged by the medical profession outside of the hospital." Such persons, in the opinion of the hospital, are those below the economic status of a family of five whose *annual income* is $2,500. These persons pay *$3.50* per day for a bed in an 18-bed ward, *or $4.50 a day for a bed in a 2-bed ward.* To them no charge is made for medical and nursing service; neither is any charge made for surgery. This hospital will accept patients of the economic status of a family of five whose annual income is between *$2,500 and $4,000,* at the same rates as above for beds in both the large and the 2-bed wards, or it will accept such patients in private *rooms at the rate of $6 per day* without both or $10 per day *with bath, with an additional charge of $6 per day* for private nurse, plus $1 per day for *her board, or a charge of $4 per* day for a hall nurse serving three *other patients.* Persons of this economic status are charged for professional services in the departments of surgery or medicine; the charge for an appendectomy, for instance, *would probably be $100.* For persons of an economic status above that of a family of five having a $4,000 income, the same charges are made for hospital and nursing services, the only difference being that more is charged for professional services, as much as $200 for an appendectomy, *or even $300 if the income is $10,000 per year or over.*

The University Hospital employs approximately 25 wholetime professional persons in its surgical, medical, pathological, and x-ray departments. These persons are paid $2,400 to $15,000 a year, the great majority being relatively young men who receive $2,400 to $4,000 per annum. The medical school pays the larger part of the amount and the hospital the balance.

The Cornell Pay Clinic.—One of the most interesting developments in this field is the Cornell Clinic, organized in November, 1921, with the cooperation of the Committee on Dispensary Development of the United Hospital Fund. The announcement that a pay clinic was to be established resulted in an almost overwhelming number of applicants. During the first five months over 18,000 different individuals were admitted. Many persons with obscure and chronic cases were influenced, it was believed, to seek medical attention by the publicity incident to the opening of the clinic. During the three years ending October, 1924, *a total of over 50,000* different persons received treatment, and there was an average *of over 18,000* new patients per year.

The following departments were being operated by the clinic at the beginning of 1926: dentistry, dermatology and syphilology, orthopedics, otology, general surgery, gynecology, neurology, ophthalmology, pediatrics, psychiatry, rhinology and laryngology, and urology, together with the following nine divisions of the general medicine department, asthma and hay fever, arthritis, cardiac, consultation clinic, diabetes, endocrin, gastroenterology, health clinic, and overweight clinic.

When the Cornell Clinic was first opened, a general admission fee of $1.00 was charged. This proved to be insufficient to meet the cost of running expenses; and for that reason the amount was later increased to $1.50.

The following fees are taken from the schedule of charges in force in January, 1926:

Each visit to each department	$ 1.50
Consultation (for patients referred by physicians)	10.00
Periodic Health examination	5.00
"Check up" 30 days after health examination	1.50
Consultation (tuberculosis or cardiac)	5.00
Wassermann examination	2.00
Sputum examination, tubercle bacilli	.50
X-ray of teeth, entire mouth	5.00
X-ray of complete gastrointestinal tract (fluoroscopy) 2 visits	10.00
Setting fractures and dislocations	10.00
Salvarsan	3.50
Vaccination	1.50

When the new fee schedule went into effect there was a slight drop in attendance, but a careful analysis of the records has led the director to conclude that the increased admission fee has not acted as a deterrent to new or old patients to any appreciable degree.

The people appear glad of an opportunity to pay these reasonable amounts for service, rather than to accept charity. It is surprising, said George H. Bigelow, when he was Director of the Cornell Clinic, to see with what avidity the patients accept the fact that they are getting what they pay for.

It is illuminating to compare charges made by the Cornell Clinic for an entire sickness or disability with charges made in private practice. A patient with a fracture of the lower arm pays at the Cornell Clinic for complete treatment, including x-ray, baking, and massage and 12 visits to the clinic, an average of $37.50. A moderate private rate for the same services of $100.

The cost of service to 80 patients of the Cornell Clinic, many of them still under treatment, selected consecutively so as to include a variety of disease conditions, was ascertained to be $522.40. It was then found that the same services, if given by a general practitioner charging a minimum office fee, would have cost these 80 patients $1,182, and that if given by recognized specialists with medicine, x-ray and laboratory tests, they would have cost them $2,595.

The relatively low charges of the Cornell Clinic are possible partly because this is a teaching institution; but a more important reason is that the work is so organized that economical use is made of equipment and professional services.

An earnest, consistent effort is made to render service of high quality. Patients have a right, asserts the Second Annual Report of the Clinic, "to expect adequate medical service without the element of charity, and to be handled promptly and courteously." To avoid long periods of waiting, a system of appointments is used. Each department of the Clinic has a definitely known and limited capacity, and when that capacity is reached, no more patients are admitted on any particular day. In this connection one device is especially interesting. In every department each patient is stopped on his way out by a trained social worker and asked if he understands what he has been told; he is given a chance to ask additional questions, and the social worker determines whether it is practicable for him to carry out the physicians' advice.

"Has the patient been treated as an individual or has the Cornell Clinic given medical treatment wholesale?" asks the Committee on Dispensary Development. Its answer follows: When several hundred patients are cared for in a few hours, to individualize each one and to deal specifically with his personal needs are difficult problems. Persons who visit the busy private offices of various expensive specialists have been impressed with the same difficulty. Individual attention to individual needs, courtesy and promptness of service are in this respect tied together. The tests of satisfaction from these points of view are psychological and not medical, and can hardly be judged except by indirect methods. It would be inconceivable that such patients as have come to Cornell would continue to come and to send their friends if the service

had been mechanical, discourteous, and inconvenient because of undue waiting."

Careful investigations have been made, with the aid of economists, to determine precisely the kind of patients belonging to the group which can afford to pay more than the nominal fee of the free clinic but cannot pay the cost of regular private medical service.

Three considerations have guided the Clinic in determining the eligibility of applicants: 1. the income of the individual or family, 2. the size of the family and the various financial responsibilities of the patient, and 3. usual cost, at private rates, of the kind of medical care required in the individual case. On these bases, three groups are recognized as eligible; applicants with incomes so low that they cannot pay the fees usually charged in private practice, those temporarily embarrassed because of unemployment, previous illness, or other financial emergency, and those who might be able to pay a private physician for most kinds of care but who cannot afford the unusual expense of some particular type of medical service. It was the conclusion of the management in 1921 that members of families whose total income was within the range of the figures listed below belonged, as a rule, to the class who can pay more than the nominal fee of a free clinic, but not the rates charged in private practice. These figures were to be revised according to changes in the cost of living.

Single individuals	$1,100-$1,800
Family of two	1,600- 2,200
Family of three	1,850- 2,500
Family of four	2,050- 2,750
Family of five	2,200- 3,000

Of 21,228 applicants in 1923, 3,129 were rejected because they could not afford even the limited charges of the Cornell Clinic, but only 265 were rejected because they could afford, in the judgment of the management the regular charges for private service.

Probably 35 to 45 per cent. of physicians in Manhattan, New York City, recognizing the limitations of private practice, have referred patients to the Cornell Clinic since it was established in 1921. Evidently the institution meets a real need, not only of patients of moderate means but of general practitioners who cannot maintain the expensive equipment nor provide in their own offices the specialized service afforded by the clinic. Statistics reported in 1923 by the Director indicated that 70 per cent. of its patients had been for six months or more under the care of private physicians for the same condition for which they came to the clinic.

. . . . The total cost of maintaining the clinic for the 9 months period ending March 31, 1925 (not including overhead such as rent, heat, and light, assumed by the medical college for services rendered), was $196,739, and the expenditures for this period were $190,780. While at the beginning of its career, the clinic was about 80 per cent. self-supporting, it is seen from the above statement that in the year 1925, with the assistance given by the university, it had become independent of outside support.

"That a pressing need exists for institutions which can furnish modern scientific medical service at moderate costs has been definitely demonstrated. It has also been shown that it is possible to provide such service by the organization of specialties and the common use of costly equipment, laboratory facilities, nursing and clerical assistance. The group clinic, the public pay clinic, the county hospital, the industrial health department, and the student health department have been sufficiently successful in improving the quality of medical services, and in some instances, in reducing the cost, to justify their extension.

Such institutions as the Boston Dispensary (which has been able to offer modern specialized service at approximately $1 per visit, including a liberal charge for upkeep and overhead), and the Public Health Institute of Chicago have shown clearly what can be done by way of providing high-grade service at lower fees.

Public pay clinics may be established in far larger numbers by medical school or departments of health, if private group clinics do not succeed in furnishing service for persons of moderate means.

Page 572—More recently such hospitals as the Henry Ford and the U. of M. are practicing medicine and surgery with their own staffs in open competition to the entire medical profession; the first, a private institution doing no free work, and the second, a state institution taking pay cases.

It is my contention that the medical profes-

sion should get at the root of this evil, this attempted pauperization of medicine. No such a problem or bogy, such as "state medicine," would ever be seen or heard of, had not the people been fed up on free medicine, free dispensaries, free clinics, etc. What other profession is so crowded with its "free offerings" on the altar of public service? A letter from Dr. S. E. Barnett, to the *Journal of the Michigan State Medical Society* in 1921.

Correspondence

A BIG MEDICAL MEETING IN A SMALL COUNTY

Monmouth, Illinois, Aug. 27, 1928.

To the Editor: I am sending herewith a report of a very interesting meeting held a few days ago by one of the smallest County Medical societies. I hope you will be able to get this report in the September issue of the JOURNAL, as I do believe that it will be of interest to many of our smaller county societies.

The following is an account of the activities of this county society.

H. M. CAMP, M. D.,
Secretary Illinois Medical Society.

During the past few years we have heard repeatedly that in a number of small County Societies it is impossible to have a meeting. We have had the opinion that many of the best Societies in Illinois are small ones, and that some of the best meetings have been held by these smaller organizations. It was our privilege to attend one of the best meetings we have seen in a long time at Rushville, Schuyler County, on August 23d. The Schuyler County Society is composed of nine members. For a number of years, meetings have been held which have held the Society together. Some of these meetings have been dinner meetings, with one of the members acting as host to the Society.

This Society recently decided to hold a big meeting, arrange an unusual program, and have a large attendance. This was arranged for August 23. The place of the meeting was Scripps Park, one of the finest of its kind in the State. During the afternoon many of the visiting physicians played golf, while others indulged in trap shooting, several of the followers of this sport breaking from 95 to 97 clay pigeons out of 100.

An excellent dinner was served at 6:30 P. M. in the Community House at the Park, and approximately 100 were present. During the dinner excellent entertainment was given by a High School Orchestra and some soloists.

The Mayor of Rushville, Hon. George Baird, gave the Address of Welcome, and the Response for the Society was given by Dr. Don Deal of Springfield, who has been a guest of the Schuyler County Society on several occasions.

Dr. Frank Deneen of Bloomington talked on the Goiter Heart, and gave an interesting outline of this condition, and its differential diagnosis. Dr. E. P. Sloan of Bloomington talked on his favorite subject, "Goiter," and in his usual interesting manner talked on the surgical treatment of goiter, showing the types which should be treated surgically and those which require only medical care. These talks were discussed by a considerable number present, and the general discussion added to the interest of the subject.

Dr. Geo. T. Palmer of Springfield gave an excellent paper on Tuberculosis, more from a diagnostic standpoint, and showing the necessity of early diagnosis and early institution of proper care in all cases. This very instructive paper was discussed by Dr. W. A. Hodges, Superintendent of the McDonough County Tuberculosis Sanitarium at Bushnell, Dr. S. E. Munson of Springfield, and others.

The last speaker on the program was Dr. Harold Swanberg of Quincy, who gave an illustrated talk on the Uses of Radium. Dr. Swanberg outlined in detail the various conditions in which radium is used, methods of application, and the opinions of many of the leading exponents of radium therapy in these various applications. Special reference was made to its use in gynecologic conditions. No exorbitant claims were made by the speaker, and he gave a resume of the modern trend of thought and practice along this line. This subject was freely discussed by Dr. A. P. Standard of Macomb, Dr. Walter Bain of Springfield, and several others.

Councilors S. E. Munson of the Fifth District, Springfield, and Col. Chas. D. Center of Quincy, Councilor of the Sixth Councilor District, were called on for short talks. Dr. Munson extended

a courteous invitation to all present to attend the Sangamon County meeting to be held at Petersburg on Wednesday, September 12, 1928.

Dr. A. L. Brittin, Past President of the Illinois State Medical Society, was introduced, and made a short talk commending the Schuyler County Society for the excellent meeting, and also urged those present to attend the Sangamon County meeting, which will be held in his own County, Menard, on September 12. Dr. Brittin also reminded us that his County Society was even smaller than the host Society of this meeting, and again called attention to the fact that a small Society can hold not only an interesting meeting, but a big one.

Dr. H. O. Munson of Rushville thanked those present for coming to the meeting, and also announced that this was to be an annual affair, and that all present were invited to attend their still bigger (if possible) 1929 meeting.

We take pleasure in recommending this type of meeting to all small Societies, and if members work together, it is quite evident that a similar meeting can be put across.

THE FARMER HAS DESERTED THE SMALL TOWN DOCTOR, NOT THE DOCTOR THE SMALL TOWN

Kankakee, Illinois, Aug. 10, 1928.

To the Editor: The article in the August issue of the JOURNAL from the "National Grange" relative to the country doctor situation is interesting but does not place the blame where it belongs. The farmer is to blame. He has ceased to adequately support the country doctor and the basic reason for this is ease of transportation.

I started practicing nearly thirty years ago in the horse and buggy age. In those days it ordinarily took two hours to go twelve miles. Nowadays the farmer in that community can drive fifty miles in the same length of time and he does. In that community today the local doctors get nothing but emergency cases and confinement and other work among people who are too poor to get away. The confinements all go out of town, (if able) much of the surgery goes out without even consulting local men. Whereas, the town used to support four or five doctors it is now able to support only two, and they are hard up. The people are still there, the sickness is still there but it is on wheels travelling to the big towns.

The farmer has deserted the small town doctor, not the doctor the small town and the farmer.

It is not specialization except in this respect that the farmer will get into his car and go to a specialist himself without even consulting the home doctor and an awful lot of them do.

PAUL R. HOWARD.

COOK COUNTY PHYSICIANS AND THE CORONER'S OFFICE

Chicago, Illinois, Aug. 18, 1928.

To the Editor: Enclosed is a copy of a letter mailed to Dr. Ludvig Hektoen, referring to the articles recently published in the Chicago papers.

Kindly publish this correspondence in the forthcoming issue of the ILLINOIS MEDICAL JOURNAL. The medical profession are entitled to the facts and I am therefore sending it to the JOURNAL for publication rather than ask for publication in the newspapers.

THOMAS P. FOLEY, M. D.

25 E. Washington St.

August 17, 1928.

Dr. Ludvig Hektoen,
637 South Wood Street,
Chicago.

Dear Doctor:

I have read with interest articles appearing in The Chicago Sunday *Tribune* of August 12th and The Chicago Daily *News* of August 13th relative to the type of physicians appointed by Coroner Oscar Wolff since 1919.

I was a Coroner's Physician from December 15, 1924, to October 7, 1927, having been appointed, not on a political basis, but on the recommendation of The Public Relative Committee of The Chicago Medical Society. I question the good taste of an ex-president of The Chicago Medical Society ignoring an official action of that body.

I take exception to your statement "it unfortunately must be said that they have had practically no training or experience for the work for

which they were appointed." I am a graduate of the best medical school in Chicago, an ex-interne of Cook County Hospital and have taught medicine since leaving the County Hospital in 1910.

The natural inference from the above quoted newspaper statement is that your idea of a pathologist is one whose knowledge came as a natural gift. I disagree with this because I know from actual experience that any competent physician who applies himself diligently and conscientiously and has the magnificent opportunity offered at Cook County Morgue can acquire a knowledge of pathology. It was this same opportunity that made pathologists of yourself and your associates, but a Coroner's Physician must be more than a technician. He should be human. He comes in contact with the public at a time of sadness and distress. He must be big enough and broad enough to recognize the rights of all concerned—the Coroner, the family and the undertaker. The office is no place for a narrow minded, overbearing scientist.

When you went to the County Morgue as a Coroner's Physician I do not believe your knowledge or experience was any greater than some of the physicians criticized in your report.

I did the work at Cook County Morgue thoroughly. I had no group of students doing the posts, making the necessary notes, and no stenographer from the Coroner's office writing the statements for the Deputy Coroner. I know my statements, which are public records, compare favorably with yours or any of your associates who were Coroner's physicians.

I have written two articles of medicolegal interest. One appeared in the magazine of The National Coroners' Association and the other in the ILLINOIS MEDICAL JOURNAL. Both were original and not the work of someone else with my name attached.

My reason for leaving the Coroner's office in 1927 was because the time required was more than I could give from practice and I naturally gave up the one paying the least—the Coroner's office.

Yours very truly,

THOMAS P. FOLEY.

25 E. Washington St.

COUNTY HEALTH SCHOOL SUPERFLUOUS—BLUE ISLAND OFFICIALS AND PHYSICIANS IN THAT VICINITY OPPOSE ESTABLISHMENT OF COOK COUNTY HEALTH SCHOOL

This, a plain statement of facts reprinted from *The Blue Island Sun-Sentinel* of May 17, 1928, reveals a fresh point of attack on the part of those forces determined to effect the socialization of the medical profession.

The attempt was nipped in the bud at Blue Island as is evidenced through prompt action by the city officials and the southern branch of the Chicago Medical society. Similar and surreptitious attempts may be expected.

COMMISSIONERS WITHDRAW PLANS FOR THIS CITY

CHICAGO MEDICAL SOCIETY CALLS IT SOCIALISTIC AND POLITICAL

SAY THERE IS NO NEED

A letter written to Hon. Paul T. Klenk by the Southern Cook County Branch of the Chicago Medical Society is reproduced on this page and explains in detail the stand that the society takes in regard to the proposed health center.

The announcement of the establishment by the Board of Cook County Commissioners of the Cook County health school in Blue Island for the south end of the county made recently, aroused such concerted opposition on the part of the physicians of the city and of the surrounding communities as well as here that at a meeting with the county commissioners last week attended by every active physician of the city of Blue Island excepting one, Dr. A. J. Roemisch, who was on a case at a hospital at the time, the county board decided to withdraw the health center.

Dr. Herbert L. Wright, director of health of Cook county, expressed himself as being sure that his work was misundertsood by the local physicians and met in conference with them at the St. Francis hospital last Wednesday afternoon. The meeting proved futile in solving the situation and ended by the county director walking out on the physicians after they began to ask what he regarded as personal questions.

PROMINENT MEN

The meeting with the Board of Commissioners was attended also by Mayor Paul T. Klenk, Dr. G. Henry Mundt, president of the Illinois Medical society, Dr. Edward Ochsner, past president American Medical association, and Dr. P. R. Blodgett, counselor, South Cook county branch of the Chicago Medical society.

Dr. Blodgett, who acted as spokesman, was not allowed to finish his case for the phyiscians before Anton J. Cermak, chairman of the board, made a motion that the local center be withdrawn and no

more established anywhere in the county except with the consent of the mayor and physicians of that place.

Local physicians declare that neither they nor the hospital at any time are neglectful of charity cases and that there is no need of a health center or clinic as far as they are concerned.

Fear Socialism

They point out that it is not so much the question of this clinic, but that the whole idea leads toward the socialization of medicine and eventually to state controlled medicine such as is the case in Germany. This strangles individual endeavor and results in killing initiative among the physicians.

"Would you like to be told to what doctor you must go for your ailments? Would you want a political appointee of uncertain medical standing to administer to your illnesses? If you were in the lumber business how would you like to have the state establish a free lumber yard in your town?" These are questions that the physicians here ask.

MEDICAL SOCIETY EXPLAINS TO MAYOR KLENK OBJECTIONS TO FREE HEALTH CLINIC HERE

Honorable Mayor Paul T. Klenk
Mayor City of Blue Island
Blue Island, Illinois.

DEAR SIR:—

The Southern Cook County Branch of the Chicago Medical Society sincerely appreciates your cooperation with our committee in voicing our objections before the County Board to the establishment of the Cook County "School of Health" in Blue Island.

Our objections to the establishment of the clinic are as follows:

The taking over of the practice of medicine by the state is a part of a socialistic, beaureaucratic trend of government advocated by long-eared reformers and is patterned after the mistakes in the field of public health practiced in many European countries.

More particularly since the war there has been an intense desire on the part of various "up-lifting organizations" to have the government domiante and regulate everybody's business but their own, and to extend this practice down to the county and city governments.

The national government should have no part in those affairs in which the state is able to act and for which it is responsible, and the same applies to the state in its relation to the county, the county in its relation to the city, and the city as it concerns the individual. Paternalism in government, unless curbed, will break down American institutions and will destroy the underlying principles of representative government.

In its application to this phase of the practice of medicine by this County Board in the establishment of a "clinic" or "School of Health" in Blue Island, we feel that such a procedure should be condemned (1) because it will be maintained as are all public and most private charities, not for the poor alone, but for all who apply for treatment, and (2) because it abrogates the principle that charity should cease when an individual is in a position to discharge the obligations of citizenship, that that type of charity which pauperizes the individual is a bad thing for society. The individual who is entitled to medical charity is he who is an object of charity in other respects. If he is financially able to do so, he should pay his doctor as well as his grocer and his coal man. Any organization which pauperizes the individual to any degree destroys a part of the self-reliance and the self-respect of that individual and makes him less of an asset to his community.

The care of deserving charity is one of the heritages of the profession and we accept it as such. The deserving poor have been adequately cared for by the profession. No class of men give so freely to the sick in need as do the doctor. We believe that we are safe in saying that the physicians of our communities give more to charity than do all other agencies combined. This contribution to the welfare of society is in every instance a personal one and is of the type that helps the individual back on his feet so that he may become again a useful member of society, but is never the type that pauperizes him.

Private hospitals have done a large amount of charity work. There is no need for the extension of the charity work of the County Board in Southern Cook County. The doctors are adequately caring for all the sick. Those who are in need of long periods of treatment and hospitalization are being referred by the physicians to county institutions or to the charity wards of public or private hospitals.

Our taxes are being raised continually. The taxpayers of Cook County have no money to spend on a program of public work which aims at the pauperization of part of its people. The communities that are continually appealing for the establishment of such "clinics" are raising their own taxes and are making possible more and more increases as time goes on.

Part of the money set aside for the operation of these "clinics" goes for pork-barrel activities which are a part of the spending of the taxpayer's money. Part of the money goes to pay a type of doctor who is a failure in private practice and must feed upon the public. Some of these doctors have not even a license to practice medicine—this applies particularly to those connected with the proposed Blue Island Health School.

If all legal services were dispensed to the individual without cost the type of service would soon become very mediocre—the men with ability and initiative would soon leave. The same situation would apply to the medical or to any other profession. In order that any profession may render the type of service which society demands of it, society must make it possible for that profession to maintain its economic independence.

The getting of something for nothing is the "bunk." We get about what we pay for in this world and this applies just as much to medical services as it does anything that we buy. When you know that medical services are being given away at a particular clinic

it is a foregone conclusion that those who go there get little worth while. This, of course, appeals only to the small "gimme" type of individual which all of us must put up with. The thinking men and women know that the individual, careful attention of their own physicians is more thorough and more satisfactory than being passed down the line in any clinic.

There is no efficient substitute for that individual attention that only the private physician can supply. The health of the community lies in the hands of the private physicians.

Yours very truly,
Southern Cook County Branch of the
Chicago Medical Society

AMERICAN PUBLIC HEALTH ASSOCIATION

Many prominent physicians, surgeons, health officials, nurses, scientists and social workers from Illinois are to take leading parts in the 57th annual convention of the American Public Health Association, to be held in Chicago at the Stevens Hotel, October 15 to 19, inclusive.

More than 3,000 delegates and visitors will be present at this year's meeting, including representatives from every state in this country, as well as groups of prominent doctors from Germany, Switzerland, England, Canada, Mexico and the Canal Zone.

The convention itself will be divided into eleven main sections as follows: Epidemiology, Cancer, Child Hygiene, Vital Statistics, Health Officers, Industrial Hygiene, Laboratory, Public Health Engineering, Foods, Drugs and Nutrition, Public Health Education, and Dental Hygiene.

This year the American Child Health Association and the American Social Hygiene Association are to meet jointly with the American Public Health Association, and the first session of the convention will be a joint one of these three organizations, when Dr. Herman N. Bundesen, president of the American Public Health Association, will deliver an address of welcome and speak on the aims and projects of the meetings to be held in the following days. This joint meeting will be on Monday evening, October 15.

On Wednesday evening a second general session will be held when Dr. Frank G. Boudreau, of the health division of the League of Nations, will be present from Geneva, Switzerland, to speak on "International Health."

Probably the section which will create the greatest general interest will be the one on Epidemiology, which will be under the direction of Dr. Edward S. Godfrey, Jr., Director of the Bureau of Communicable Diseases of the New York State Department of Health. Dr. Alton S. Pope, Chief of the Bureau of Communicable Diseases of the Chicago Health Department, will present his recent research on "High Case Fatality in Epidemic Meningitis." Dr. Thomas G. Hull, of the Diagnostic Laboratory of the Illinois State Health Department; Dr. Lloyd Arnold, Professor of Bacteriology and Preventive Medicine at Loyola University, Chicago, and Harry F. Ferguson, of the Illinois State Department of Health, will all three report on "Water-Borne Epidemics of Diarrhea in Illinois."

Other features of this section will be a paper on "Ratio Distribution and the Death Rate of Diphtheria in New York City," by Dr. Haven Emerson, of the Columbia University Department of Health Administration, New York City; "Epidemiological Studies of 83 Cases of B. Abortus Infection," by Dr. A. V. Hardy, of Ames, Iowa; and "An Epidemiological Study of Thirty-six Cases of Malta Fever in Michigan," by Dr. Paul Orr, Commissioner of Health, of Lansing, Michigan.

The American Public Health Association looks to the Epidemiology Section as one which will be of great value and importance in the history of health movements.

In the first session of the Health Officers Section, Dr. Herman N. Bundesen, president of the American Public Health Association, will co-operate with Arthur J. Dempster, of the University of Chicago, and Dr. I. S. Falk, also of the University of Chicago, in leading the discussion on "Relation Between ultraviolet Rays and Vital Statistics."

In the second session of this section Dr. S. S. Winner, of Chicago, will present a paper on "Active Scarlet Fever Immunization." The discussions in this session will be led by Dr. Walter H. Brown, of Palo Alto, California, and Dr. L. D. Bristol, Executive Secretary of the Bellevue-Yorkville Health Demonstration, New York City.

Other topics of this section include: "Health Demonstrations," by Dr. George C. Ruhland, of the New York State Department of Health; "Four Years' Experience with a Consolidated Inspection Service in the Chicago Department of Health," by Dr. G. Koehler, Assistant Commissioner of Health, and Dr. John E. Murphy, Chief of the Bureau of Inspection Service of the Department of Health, Chicago; "Practical Points About Active Immunization Against Diphtheria and Scarlet Fever," by Dr. William H. Park, Director of Laboratories, of the New York City Department of Health; "Ultra Violet Therapy and Public Health Clinics," by Dr. H. J. Gerstenberger, of the Babies' and Children's Hospital, Cleveland, Ohio; and "The Prevention of Air Polution," by Dr. Robert D. McLaurin, of Cleveland, Ohio.

The discussion in the Industrial Hygiene Section will be under the direction of Dr. Volney S. Cheney, Medical Director for Armour and Company, Chicago. The first report to be given in this section will be that of John B. Reynolds, Director of Industrial Development for the World West Utilities Company, Chicago. Mr. Reynolds will present "The Possible Relationship of Mutual Benefit Associations to the Health of Employees."

The Industrial Hygiene Section also includes the following papers, each presented by a recognized authority on the subject: "Mobilizing Mutual Benefit Associations to Include Health Activities," by Magnus W. Alexander, President of the National Industrial

Conference Board; "Extension of Industrial Hygiene by Tuberculosis Associations in the United States," by Bernard S. Coleman, Executive Secretary of the Hudson County Tuberculosis League, Jersey City, New Jersey; "The Tuberculous Worker and His Placement in Industry," by C. W. Bergquist, president of the Chicago Tuberculosis Institute; and "Health Education in an Industrial Plant," by John B. Gibson, Director of Safety and Health for the Western Electric Company, of Chicago.

Dr. Benjamin Goldberg, Secretary of the Board of Directors of the Chicago Municipal Tuberculosis Sanitarium, will be one of the principal speakers in the Vital Statistics Section. Dr. Goldberg will have as his subject "Tuberculosis in Racial Types, with Special Reference to Mexicans."

The discussions in the Vital Statistics Section will be led by Dr. Herman T. Peck, General Medical Director of the Medical Field Bureau, New York State Department of Health. "Our National Accident Problem," will be the subject for an address by Charles B. Scott, Manager of the Bureau of Safety, Chicago, and R. L. Forney, Statistician of the National Safety Council of Chicago, will speak on "What We Don't Know About Accidents."

Discussions in the Child Hygiene Section will be under the direction of Dr. William Danforth, of Evanston, Illinois. Dr. Danforth is a Fellow in the American Gynecological Society. In this section Miss Mary E. Murphy, Director of the Elizabeth McCormick Memorial Fund, Chicago, will give a report on the "Result of the National Congress of Parents and Teachers 1927 Summer Round-Up of Preschool Children," and Miss Sara B. Place, Superintendent of the Infant Welfare Society, Chicago, will speak on "Child Hygiene in a Large City, by a Voluntary Agency Acting for the City Health Department." B. K. Kilbourne will present the various phases of child hygiene work in a small city. Mr. Kilbourne is City Health Officer for Fargo, North Dakota. Miss Grace L. Anderson, Director of the East Harlem Nursing and Health Service, New York City, will give a paper on "Child Hygiene in a Limited Area of a Large City."

T. J. King, Supervising Food Inspector of the Chicago Department of Health, will have charge of the Foods, Drugs and Nutrition Section. The heads of the different committees in this sections are: H. M. Loomis, United States Public Health Service, Washington, D. C., Fruits, Vegetables and Their Products; Dr. F. C. Blanck, of the Bureau of Chemistry, Washington, D. C., Cereals and Their Products; Dr. Carl R. Fellers, Massachusetts Agricultural College, Amherst, Massachusetts, Meat, Fish and Shellfish; Dr. Harry W. Redfield, of Mendham, New Jersey, Dairy Products and Eggs; and Professor H. C. Sherman, of the Columbia University Department of Chemistry, New York City, Nutritional Problems.

A symposium on "Sterilization of Milk Containers and Equipment" will be a feature of the Public Health Engineering Section. This symposium will be under the direction of Professor M. J. Prucha, of the University of Illinois Department of Dairy Products, Urbana, and Lewis Shere and Gerald L. Hoeft, both of the Chicago Department of Health. George W. Fuller, Consulting Engineer, New York City, and Carl Speer, Sanitary Engineer, Chicago, will lead the discussions in this section.

A study of "Carbon Monoxide Pollution of Air in Chicago" will be given by the following: Joel I. Connolly, Chief of the Bureau of Sanitary Engineering, Mathew J. Martinek, Senior Sanitary Chemist, and John J. Aeberly, Jr., Chief of the Division of Ventilation. Dr. H. J. Shaughnessy, of the University of Chicago Department of Hygiene, will give a report in the symposium on "School Room Ventilation."

Another symposium of the Sanitary Engineering Section will be one on "Financing Water Supply and Sewerage Projects." This will be led by Langdon Pearse, Sanitary Engineer, Chicago Sanitary District. The discussion following this symposium will be directed by Harry F. Ferguson, Chief Engineer of the Illinois State Department of Health.

C. L. Waggoner, Superintendent of the Coke Oven Plant, By-Products Coke Corporation, Chicago, will present a paper on "Industry's Problem in the Disposal of Phenol Wastes, as part of the symposium on "The Disposal of Phenol Wastes," and Dr. Floyd W. Mohlman, Chief Chemist of the Chicago Sanitary District, will tell of his recent researches in "Biochemical Oxidation of Phenolic Wastes."

In the Laboratory Section Professor E. O. Jordan, of the University of Chicago, will make the report for the Committee on Standard Methods, and Dr. Ruth Gilbert, of the New York State Department of Health, will report on the progress for 1928 of standardization of the Wassermann test.

An interesting report which will be a feature of the third session of the Laboratory Section will be given on "Modified Iodine Pentoxide Method for Determination of Carbon Monoxide in Air." This is to be given by M. J. Martinek, Senior Sanitary Chemist, and William C. Marti, both of the Chicago Department of Health. Other papers to be presented in this same session include: "A Study of the Effect of Calmette's B. C. G. Vaccine on Experimental Animals," by Dr. Merrill J. King, Director of the John R. Hegeman Laboratory, at Mt. McGregor, New York; "Coliform Organisms in Milk," by Dr. Edmund K. Kline, of the Department of Health, Birmingham, Alabama; and "2500 Microscopic Slide Precipitation Tests and Wassermann Tests with Same Antigen with Clinical Comparison," by Dr. Benjamin S. Kline, S. Littman and M. C. Bowman, all of the Mt. Sinai Hospital, Cleveland, Ohio.

The Public Health Education Section will work out steps for planning publicity for health campaigns. Professor Franklin Fearing, of the Department of Psychology, Northwestern University, Evanston, will open the subject with "The Approach—How Decide On the Motives for Conduct to Which An Appeal Will Be Made," Dr. Iago A. Gladston, of the Bureau

of Health Education, of the New York Tuberculosis and Health Association, New York City, will follow Professor Fearing's talk with "Examples of Health Education and Publicity Programs—A Review of Current Practice."

At a luncheon session of this section Miss Mary L. Hahn, of the Illinois State Department of Health, will speak on "Program for Health Education Training in Teachers' Colleges," and Miss Marie F. Kerwin, of the Tuberculosis and Public Health Committee, State Charities Aid Association, New York City, will present "Diphtheria Campaigning—What Is New? What Is Difficult?"

At one large session when the Public Health Education Section will meet with the Child Hygiene Section and the American Child Health Association, Miss Carolyn Hoefer, of the Elizabeth McCormick Memorial Fund, Chicago, will give a "Study of the Health of School Children in Joliet." Dr. James F. Rogers, Chief of the Division of Physical Education and School Hygiene, Bureau of Education, Washington, D. C., will speak on "A Review of School Health Work," and Dr. Raymond Franzen will discuss the educational tests used by the American Child Health Association in a school health study. Twenty minutes of this session will be taken up by presentation of studies in health education, made under the direction of Dr. John Sundwall, Director of the Division of Hygiene, Public Health and Physical Health Education at the University of Michigan, Ann Arbor, Michigan.

In the Dental Hygiene Section Dr. Harry J. Thomson, Field Secretary of the Canadian Dental Hygiene Council, Toronto, Ontario, Canada, will speak on "What Habit, Attitude and Knowledge Objectives Should Be Sought at Various Age Levels," and Dr. William R. Davis, Director of the Bureau of Mouth Hygiene of the Department of Health, Lansing, Michigan, will discuss the dental health education materials designed for school use.

A total of 81 observation trips to supplement the convention discussions have been planned. This number includes 18 scheduled trips and 63 optional ones. Every Chicago institution of interest to workers in any phase of health will be open to convention delegates and visitors.

Three scheduled trips are planned to be particularly valuable to doctors and hospital officials. The first of these trips includes the New Children's Building of the Cook County Hospital, the Municipal Contagious Diseases Hospital, and the Illinois Research Hospital. This latter institution is of more than ordinary interest because it gives those who visit it an opportunity to see an immense medical project in the process of development. The Research Hospital, the Psychopathic Hospital and the Orthopedic Hospital have all been completed. The Nurses' Home is now under construction, and the student laboratories, dental infirmary, as well as the teaching amphitheatres are being planned. At the present time the Research Hospital has approximately 150 beds available. The dispensary is one of the largest in the city and forms an invaluable aid for instruction of students in practical medicine. The library of the medical school is one of the largest and most complete in the country.

The second of these three trips includes the Children's Memorial Hospital, the Municipal Tuberculosis Hospital and the Daily News Fresh Air Sanitarium, in Lincoln Park, where each year over 30,000 babies and about one-quarter as many mothers are treated annually. It is a most interesting institution, worthy of study from all those interested in child health.

The third of these trips is to the medical schools of the University of Chicago and Northwestern University. The former medical unit was recently completed at a cost of $5,000,000, and is one of the best equipped medical institutions to be found anywhere. It is destined to be a center of far-reaching importance and influence for medical education and research.

The Northwestern University Medical School is located on the McKinlock, or downtown, campus. It is housed in a mammoth twenty-story building, the first seven floors of which belong to the medical school and the next six floors to the dental school. The medical clinic, which now occupies the lower three floors will later be incorporated in the new General Hospital to be built on the campus in the near future.

Not the least interesting of the many features of this year's American Public Health Association Convention will be the 150 exhibits on view. These exhibits will display the latest and most modern health equipment and apparatus. Traveling health stations, or railroad cars, will be stationed on the Illinois Central tracks, directly opposite the Stevens Hotel all during the convention. These cars are equipped to be rushed to the spot of a disaster, or epidemic, or to take health service from a centralized district to more isolated places.

Extensive plans have been made for the entertainment of women guests of the convention. There will be motor tours of Chicago through the beautiful parks and boulevards, luncheons at the Edgewater Beach Hotel and Marshall Field's, style shows especially for the lady guests, and the usual annual banquet.

THE AMERICAN COLLEGE OF SURGEONS CLINICAL CONGRESS

The American College of Surgeons will hold the eighteenth Clinical Congress in Boston, October 8-12. Headquarters will be at the Statler Hotel and meetings will be held in the ballroom of the Copley-Plaza Hotel and Symphony Hall. The Hospital Standardization Conference will be held in morning and afternoon sessions in the ballroom of the Copley-Plaza Hotel Monday, Tuesday, Wednesday and Thursday. An innovation this year will be the commencement of the clinics in the Boston hospitals on Monday afternoon, continuing through the mornings and afternoons of the following four days. Monday evening's program will include an address of welcome by the local Chairman, the address of the retiring President,

Dr. George David Stewart, New York, the inaugural address of the new President, Dr. Franklin H. Martin, Chicago, and the John B. Murphy oration on surgery by Professor Vittorio Putti of Bologna, Italy. Tuesday, Wednesday and Thursday evenings' sessions will be held in the ballroom of the Copley-Plaza Hotel. At the Wednesday evening meeting the visiting surgeons will be the guests of the Boston Surgical Society at a special meeting when the Bigelow medal is to be awarded. On Friday evening the Annual Convocation of the College will be held in Symphony Hall when the 1928 class of candidates for Fellowship in the College will be received. The fellowship address on this evening will be delivered by Dr. William J. Mayo. The annual meeting of the Governors and Fellows will be held Friday afternoon and will be followed by a symposium on Traumatic Surgery to be participated in by leaders in industry, labor, indemnity organizations and the medical profession. Ether Day will be celebrated in the Dome Room of the Massachusetts General Hospital on Friday when a bronze bust of William T. A. Morton will be presented to the hospital. It was in this building that ether was first administered for the production of surgical anaesthesia on October 16, 1846. Several newly completed medical motion pictures produced under the supervision of the American College of Surgeons and approved by it will be shown during the Congress. Reduced fares on the railways of the United States and Canada have been authorized to those holding a convention certificate so that the total fare for the round trip will be one and one-half the ordinary first class one-way fare. Other outstanding features will be the exhibits. In addition to the commercial exhibits the departments of the College will present scientific exhibits. A number of distinguished foreign guests of international reputation have signified their intention of attending. The Chairman of the Boston Committee on Arrangements is Dr. Frederic J. Cotton.

PROGRAM INTER-STATE POST GRADUATE ASSEMBLY OF NORTH AMERICA

Atlanta, Ga., October 15, 16, 17, 18 and 19, 1928

Monday, October 15

Diagnostic Clinic—Dr. C. J. Miller, New Orleans, La.

Diagnostic Clinic—Dr. W. A. Bastedo, New York, N. Y.

Diagnostic Clinic—Dr. J. M. T. Finney, Baltimore, Md.

Intermission

Diagnostic Clinic—Dr. J. S. Horsley, Richmond, Va.

Diagnostic Clinic—Dr. D. C. Balfour, Rochester, Minn.

Diagnostic Clinic—Dr. L. R. DeBuys, New Orleans, La.

Noon Intermission

Diagnostic Clinic—Dr. J. F. Erdmann, New York, N. Y.

Symposium on Gastro-Intestinal Diseases

"Methods of Diagnosing Diseases of the Esophagus"—Dr. P. P. Vinson, Mayo Clinic, Rochester, Minn.

"Principles of Gastric Surgery"—Dr. D. C. Balfour, Rochester, Minn.

Intermission

Symposium on Gastro-Intestinal Diseases—(Continued)

"Recent Advances in the Treatment of Intestinal Obstruction"—Dr. T. G. Orr, Kansas City, Mo.

"Diverticulitis and Its Surgical Treatment"—Dr. J. M. T. Finney, Baltimore, Md.

"Diagnosis of Diverticulosis and Diverticulitis"—Dr. J. T. Case, Battle Creek, Mich.

"Some Principles of Intestinal Surgery with Especial Reference to the Physiology of the Intestines"—Dr. J. S. Horsley, Richmond, Va.

"The Clinical Aspect of Congenital Mesenteric Malformations in Children"—Mr. G. E. Waugh, M. D., F. R. C. S., London, England.

"Chronic Appendicitis"—Dr. J. B. Deaver, Philadelphia, Pa.

"Cancer of the Colon"—Mr. Charles Macauley, F. R. C. S., Dublin, Ireland.

Dinner Intermission

Symposium on Gastro-Intestinal Diseases—(Continued)

"Mucous Colitis"—Dr. W. A. Bastedo, New York, N. Y.

"Malignancy of the Large Intestine"—Dr. J. F. Erdmann, New York, N. Y.

Address—Dr. J. S. McLester, Birmingham, Ala.

"Observation on the Functioning Human Breast"—Dr. L. R. DeBuys, New Orleans, La.

"A General Consideration of Cesarean Section"—Dr. C. Jeff Miller, New Orleans, La.

Address—Sir James Dundas-Grant, F. R. C. S., London, England.

Tuesday, October 16

Diagnostic Clinic—Dr. F. W. Marlow, Toronto, Canada.

Diagnostic Clinic—Dr. J. O. Polak, Brooklyn, N. Y.

Diagnostic Clinic—Dr. H. H. Cabot, Ann Arbor, Mich.

Intermission

Diagnostic Clinic—Dr. J. B. Deaver, Philadelphia, Pa.

Diagnostic Clinic—Dr. Wm. E. Lower, Cleveland, O.

Diagnostic Clinic—Dr. W. B. Coley, New York, N. Y.

Noon Intermission

Diagnostic Clinic—Dr. P. P. Vinson, Rochester, Minn.

Symposium on Malignant Diseases

"The Importance of Return to the Principles of Halsted's Complete Operation for Cancer of the Breast"—Dr. J. C. Bloodgood, Baltimore, Md.

"Diagnosis, Prognosis and End-Results of Bone Sarcoma"—Dr. W. B. Coley, New York, N. Y.

Intermission

Symposium on Diseases of the Genito-Urinary Tract

"Relation of Urologic Diseases to Internal Medicine"—Dr. H. G. Beck, Baltimore, Md.

"Genito-Urinary Tuberculosis"—Dr. H. H. Young, Baltimore, Md.

"Surgery of the Ureters"—Dr. Wm. E. Lower, Cleveland, Ohio.

"A Consideration of Newer Diagnostic and Surgical Precedures in the Bladder and Posterior Urethra"—Dr. J. F. McCarthy, New York, N. Y.

"Some Problems of Pyelitis in Children"—Dr. Hugh Thursfield, F. R. C. P., London, England.

"Diseases of the Kidneys"—Dr. V. C. Hunt, Rochester, Minn.

Address—Dr. Edmund L. Gros, Paris, France.

Dinner Intermission

Symposium on Diseases of the Genito-Urinary Tract—(Continued)

"Some Considerations Relative to Congenital Deformity of the Lower Genito-Urinary Tract"—Mr. A. Ralph Thompson, F. R. C. P., London, England.

Symposium on Gynecology

"Significance of Chronic Pelvic Pain in Women"—Dr. F. W. Marlow, Toronto, Canada.

"Surgical Complications of Pregnancy"—Dr. J. O. Polak, Brooklyn, N. Y.

"Fundal Hysterectomy"—Dr. O. Beuttner, Geneva, Switzerland.

Address—Dr. W. A. White, Washington, D. C.

"Mucosal Irritability and Its Significance"—Mr. William Ibbotson, F. R. C. S., London, England.

Wednesday, October 17

Diagnostic Clinic—Dr. Harlow Brooks, New York, N. Y.

Diagnostic Clinic—Dr. W. D. Haggard, Nashville, Tenn.

Diagnostic Clinic—Dr. V. C. Hunt, Rochester, Minn.

Intermission

Diagnostic Clinic—Dr. C. A. Hamann, Cleveland, O.

Diagostic Clinic—Dr. W. E. Dandy, Baltimore, Md.

Diagnostic Clinic—Dr. E. P. Joslin, Boston, Mass.

Noon Intermission

"Echinococcus Cysts"—Dr. D. J. Cranwell, Buenos Aires, Argentina.

"The Nature of Disease"—Mr. J. E. R. McDonagh, F. R. C. S., London, England.

"The Emergency Function of the Spleen"—Dr. W. B. Cannon, Boston, Mass.

"Choice of Anesthetic Methods with Relation to (1) Age of Patient; (2) Location of Disease; (3) General Condition of Patient"—Dr. H. H. Cabot, Ann Arbor, Mich.

"Surgical Treatment for Auricular Fibrillation Occurring in Toxic Goiter"—Mr. T. P. Dunhill, F. R. C. S., London, England.

Intermission

Symposium of Diseases of the Respiratory System

"Surgical Treatment of Abscess of the Lung"—Dr. G. P. Müeller, Philadelphia, Pa.

"The Value of the Heavy Metals in the Treatment of Tuberculosis"—Dr. L. S. T. Burrell, London, England.

"The Treatment of Tubercular Empyema"—Dr. W. L. Keller, Washington, D. C.

"Phrenico-exeresis and Thoracoplasty in the Treatment of Pulmonary Tuberculosis"—Dr. C. A. Hedblom, Chicago, Ill.

"The Significance of Chronic Hoarseness in Adults"—Dr. J. M. Waugh, Cleveland, O.

"Anaphylaxis"—Professor L. S. Dudgeon, F. R. C. P., London, England.

Dinner Intermission

Public Meeting

"Poliomyelitis"—Dr. W. D. Ayer, Syracuse, N. Y.

"Diabetes in Children"—Dr. E. P. Joslin, Boston, Mass.

"Pneumonia"—Dr. Harlow Brooks, New York, N. Y.

Address—Dr. W. D. Haggard, Nashville, Tenn.

Thursday, October 18

Diagnostic Clinic—Dr. C. A. Elliott, Chicago, Ill.

Diagnostic Clinic—Dr. A. D. Bevan, Chicago, Ill.

Diagnostic Clinic—Dr. C. H. Frazier, Philadelphia, Pa.

Intermission

Diagnostic Clinic—Dr. F. H. Lahey, Boston, Mass.

Address—Mr. Farquhar Macrae, F. R. C. S., Glasgow, Scotland.

"The Effects of Intestinal Protozoa"—Dr. K. M. Lynch, Charleston, S. C.

"Pellagra of Today"—Dr. S. R. Roberts, Atlanta. Ga.

Noon Intermission

Symposium on Diseases of the Gall-Bladder and Liver

Diagnostic Clinic and Address on "Cirrhosis of the Liver"—Dr. J. L. Bollmann and Dr. A. M. Snell, Rochester, Minn.

"Some Complications After Gall-Bladder Operations"—Dr. C. A. Hamann, Cleveland, O.

"Surgical Lesions of the Common and Hepatic Ducts"—Dr. F. H. Lahey, Boston, Mass.

Intermission

"Glaucoma—Our Surgical Resources for Its Relief"—Dr. L. W. Fox, Philadelphia, Pa.

Symposium on Diseases of the Brain and Central Nervous System

"Surgical Treatment of Trigeminal Neuralgia"—Dr. C. H. Frazier, Philadelphia, Pa.

"Localization of Brain Tumors"—Dr. H. C. Naffziger, San Francisco, Calif.

"The Diagnosis and Treatment of Spinal Cord Tumors"—Dr. W. E. Dandy, Baltimore, Md.

"Surgery of the Spleen"—Dr. A. D. Bevan, Chicago, Ill.

"A Useful Syndrome in the Clinical Recognition of the Syphilitic"—Dr. W. W. Graves, St. Louis, Mo.

"Deviations from the Standard"—Dr. Otto F. Leyton, F. R. C. P., London, England.

Dinner Intermission

Address—Mr. J. Howell Evans, F. R. C. S., London, England.

Address—Dr. C. A. Elliott, Chicago, Ill.

Address—Mr. Archibald Young, F. R. C. S., Glasgow, Scotland.

"Clinical Significance of Albuminuria"—Dr. Jack Witherspoon, Nashville, Tenn.

Address—Dr. Morris Roch, Geneva, Switzerland.

Address—Mr. Donald Core, F. R. C. S., Manchester, England.

Friday, October 19

Diagnostic Clinic—Dr. L. F. Barker, Baltimore, Md.

Diagnostic Clinic—Dr. D. D. Lewis, Baltimore, Md.

Diagnostic Clinic—Dr. H. A. Christian, Boston, Mass.

Intermission

Diagnostic Clinic—Dr. John Phillips, Cleveland, O.

Diagnostic Clinic—Dr. G. W. Crile, Cleveland, O.

Symposium on Disease of the Heart and Circulatory System

"Cardiolysis for Chronic Mediastinopericarditis"—Dr. E. S. Smith, St. Louis, Mo.

"Classification of Hypertension"—Dr. J. B. McElroy, Memphis, Tenn.

Noon Intermission

Symposium on Disease of the Heart and Circulatory System—(Continued)

"The Myocardium in the Acute Infections"—Dr. Harlow Brooks, New York, N. Y.

"Cardiovascular Syphilis"—Dr. A. D. Warthin, Ann Arbor, Mich.

"The Treatment of Myxedema in Relation to Circulatory Disturbances"—Dr. H. A. Christian, Boston, Mass.

"Coronary Thrombosis"—Dr. John Phillips, Cleveland, O.

Address—Mr. L. L. Cassidy, F. R. C. S. I., Dublin, Ireland.

"Acute Osteomyelitis"—Dr. D. D. Lewis, Baltimore, Md.

Address—Sir Farquhar Buzzard, F. R. C. P., Oxford, England.

Address—Dr. G. W. Crile, Cleveland, O.

"The Spastic Colon and Its Concomitants"—Dr. L. F. Barker, Baltimore, Md.

"Cause and Treatment of Peptic Ulcer"—Dr. C. H. Mayo, Rochester, Minn.

STERILITY IN THE MALE

Rr. Robert Cowen of Detroit, Mich, has an article under the above caption in the July number of the *Urological Cutaneous Review.* We quote:

Sterility in the male is a very definite pathological entity. The determination of its basis, and the selection of its surgical remedy should be quite an exact science. It is normal only after the male climacteric and before puberty. Geriatric sterility may have its inception long before the impotence consequent to the endocrinal changes normal to advanced age.

The incidence of sterility in the male is estimated at from 20 to 33⅓ per cent. of all childless marriages. (20), (21), (22), (23), (24). Still, in the presence of such figures, prominent gynecologists are frequently guilty of subjecting their unfortunate women patients to one or more Rubin insufflation tests, treatment for hyperacidity of the vaginal secretions, and even to laparatomies, following the customary cervical instrumentation, without as much as casual inquiry as to the state of fertility of the husband.

The causes of sterility, other than the possibility of specific incompatibility of the sperm of one individual with the specific protein of the ovum of another, or the antigenic effect of the serum of the female for that of the male spermatozoa, (2), (8), (19), (25), can be classified:

Azoospermia—

(a) Malformations: Testicles, Vas deferens, Seminal vesicles, Epididymis, Urethra, Bladder.

(b) Hypoplasia: Anatomical, Endocrinal.

(c) Atrophy, Trauma: Varicocele, Mumps, etc.

(d) Obstruction: Any part of the genital tract.

Oligospermia

Necrospermia: Exhaustion from physical or sexual excesses. Inflammation of any part of the genital tract. Obstruction at any part of the genital tract.

Impotence, though frequently associated with decreased fertility, is never a cause of sterility. Successful artificial impregnations from aspirated spermatozoa from the testicle, injected directly into the uterus without any sexual excitement, is reported. (8).

The diagnosis of sterility is accomplished by the examination of semen obtained: (a) By massage of the seminal vesicles. (b) From the ejaculate taken from a condum after coitus or artificially induced orgasm. (c) From the semen after being deposited in the vaginal *cul-de-sac* after sexual intercourse, or (d) from the secretion from the testis aspirated directly by needle puncture. The value of the method used increases in the order named. Examination of the expressed contents of the seminal vesicles is difficult, for if the vesicles are correctly emptied by massage the semen enters the bladder and must be recovered from there for examination; prostatic secretion only will appear at the meatus. Three careful successive examinations after appropriate periods of rest for the patient, are enough to support a report as to the presence or absence of spermatozoa.

The treatment of sterility depends upon the appropriate surgical removal of the causative factor. Malformations, congenital or acquired, such as hypospadias, strictures, etc., can often be completely remedied. Other anatomical deviations from the normal can be adjusted. The following operative procedures have been in use by the writer in the past few years but the results are not yet definite enough to report on, but they all have authoritative evidence of results showing them to be acceptable procedures.

1. Vaso-puncture. Belfield's Operation (1), (4), (5), (6), (7), (8).

This procedure flushes out the vas deferens and the seminal vesicles and proves or establishes the patency

of the ejaculatory duct. In approximately 50 per cent. of the writer's cases of seminal vesiculitis the results have been apparently curative.

2. Resection in occlusion of the vas deferens. (3). This is imperative where an occlusion exists which does not permit the passage of fluid injected into the vas.

3. Anastomosis of the vas to the epididymis. (9) Epididymovasostomy is indicated where the tail or body of the epididymis is occluded and the head is probably patent, with or without partial epididymectomy on the impervious portion. (16). This procedure is indicated with every epididymectomy that does not sacrifice the head of the organ.

4. Anastomosis of the vas to the testicle itself. Orchido-vasostomy. (9). This should be routine after epididymectomy, although the ultimate passage of spermatozoa up the vas is doubtful.

5. Synorchidopexy. (10). The ablation of the scrotal septum and the application of one testicle to the other may provide a normal vas of one side for a fertile testicle with no outlet on the other.

At present in the writer's opinion, the non-acceptable operations are:

1. Testicular aspiration and artificial impregnation. (18).

2. Catheterization of the ejaculatory ducts to determine or establish outlet from the seminal vesicles. (3), (7). In the writer's hands this is followed by traumatic epididymitis.

3. Testicular transplantation.

4. Vaso-puncture for other than obstruction of the seminal vesicle and duct. (9).

One illustrative case is here cited. Mr. A. B., (referred by Dr. Max Kohn). He is anxious to beget children at any cost or effort. This patient's wife after subjection to several tubal insufflation tests with X-ray by the most prominent gynecologist in the city, was told to report for treatments for hyperacidity of the vagina. Presenting himself to me, he gave a history of gonorrhea five years ago with unilateral epididymitis. On the one side he showed a large varicocele with a markedly atrophied testicle. On the other side there was a completely sclerosed epididymis with an apparently normal vas and testicle. Diagnosis of azoospermia was made and the following procedures recommended:

1. Vaso-puncture, to determine the potency of the vas deferens; and varicocelectomy at the first operative sitting. (Local anaesthesia.)

2. Partial epididymectomy and epididymovasostomy (Ethylene anaesthesia). After waiting about 8 months for results from this operation the next step is:

3. Total epididymectomy and orchido-vasostomy on the normal testicle and a synorchidopexia on the atrophic one.

The above operations all have the weight of evidence in their favor as to their successful terminations. So far the results in the above case are to be hoped for. Meanwhile, the plea in closing this paper is for conservatism in the treatment of epididymitis. Operation is indicated if it has not subsided after a few days treatment according to the modern methods, rest, diathermy, milk injections, and turpentine. Removal of the epididymis is indicated where it appears that epididymotomy will be followed by an occlusion; but anastomosis of the vas to the testicle or remaining head of the epididymis, after flushing the vas and seminal vesicle, should be routine.

1706 Stroh Building.

1. Belfield: *Trans. Amer. Asso. G.-U. Surgeons.* 1906, 1, 63, (Irrigation and Drainage of the Seminal Duct Through the Vas Deferens).

2. Grazialdi, G.: *Riforma Med.* 1925, xli, 627. (Sperm Culture.)

3. Belfield: *Journ. of Urology*, 1925, xiv, 349.

4. Cumming, R. E.: *Urologic and Cutaneous Review.* Jan., 1924. (Sterility After Vas Puncture).

5. Cummings and Glen: *Journ. of Urology.* 1921, 543. (Vas Puncture as Means for Cure of Chronic Sem. Vesiculitis).

6. Luys: *La Clinique.* Jan., 1922.

7. Klotz, 1895; Quoted by Belfield: *Journ. of Urology.* 1925, xiv, 349. (Contra-indications to Ejaculatory Duct Catheterization).

8. Metterleiter-Münch: *Med. Wochenschrift.* lxxii, 24, 977, 1925. (The Sperm and Artificial Fecundation).

9. Hagner, F.: *Ann. Clin. Med.* 1925, iv, 350.

10. Voelker u. Wossidlo: *Urolog. Operatsionslehre.* Theime, Leipzig, 1920.

11. Nogue's et Durupt: *Etude sure le diagnostic du gonococcisme latent. Jour. d'urol. med. et chir.* 1925, xix, 379.

12. Thomas, B. A.: *Journ. of Urology.* 1925, xiv, 331.

13. Mark, E. G.: *Journ. of Eurology*, 1925, xiv, 323. (Indications for Vas Puncture).

14. Belfield: *J. A. M. A.*, 1913, 1867, (Vasotomy).

15. Rolnik, H. C.: *Arch. Surg.*, 1924, 188, 203. (Regeneration of the Vas Deferens).

16. Rolnik, H. C.: *Surg. Gyn. and Obstet.* Vol. 41-15. (Mechanism of Epididymitis).

17. Lommel: *Zeitsch. f, urol. Chir.*, 1914, 214-230.

18. Casariego, A. G.: *Rev. de med. y cirug. de la Habana*, 1925, xxx, 544.

19. Hagner: *Journ. of Urology*, 1925, xiii, 377. (Sterility in the Male, Operative Experience).

20. Hunner & Wharten: *South. Med. Journ.*, 1924, xvii, 269. (Sterility).

21. Royston & Krebs: *Journ. Miss. St. Med. Asso.*, 1925, 451, xxii. (Diagnosis and Treatment of Sterility).

22. Macomber: *J. A. M. A.*, lxxxv, 21, 1603, 1925. (Lowered Fertility in the Male).

23. Young: *Practice of Urology*, 1926. Saunders Pub. Co.

24. Fogelson, S. J.: (Non-Specific Antigenic Effect of Spermatozoa Upon Fertility.) *Surg. Gyn. and Obstet.* xlii, Mar., 1925.

25. Cowen, L. B.: *Urologic and Cutaneous Review.* Vol. xxix, No. 11, 1925. (Modern Treatment of Epididymitis).

Original Articles

PHYSICAL THERAPEUTIC METHODS IN OTOLARYNGOLOGY*

A. R. HOLLENDER, M. D.

AND

M. H. COTTLE, M.D.

CHICAGO

Although the earliest official reference to the use of electricity in medicine dates back to the year 1600, it was not, until the world war that modern physicians recognized the merits of this branch of therapeutics. The past ten years particularly have marked an era of distinct progress in physical therapy. During this period several of the specialties have enjoyed more successful results for a variety of conditions. No one now disputes the value of diathermy in arthritis, in certain types of pneumonia, and in numerous post-surgical affections. The specific action of ultraviolet radiations in rickets, in bone tuberculosis, and in many types of dermatological lesions is now thoroughly recognized. Ionic medication, although known for decades past, has only lately been given a thorough trial with the result that definite indications for galvanotherapy are now being established.

If physical methods of treatment have rightfully been accorded a place in medical and surgical practice, and the internist, the surgeon, the neurologist, the pediatrician and the gynecologist have accepted the adjuvant use of light, diathermy, galvanism, static and all other physical energies in their respective specialties, it is not necessary for the otolaryngologist to apologize for the application of these energies in certain ear, nose and throat affections for which some of the time-worn orthodox methods have long been known to be inadequate. It should be noted, however, that it is not the purpose at this time to introduce physical therapy as a special or new system of treatment, but rather as an adjunct to those measures which, although helpful, are often lacking in their ability to provide prompt and sometimes permanent relief. The indications for some of the physical methods are not altogether well defined, nor can we at the present argue with much more than empiric reasoning. From a clinical standpoint, however, improved results in many aural and rhinological conditions have prompted a continued use of physical agents. By presenting our experiences and also the improved facilities which are now available for the otolaryngologist, we hope to stimulate an increased interest in this field of therapy and thus extend research in the many laboratory and clinical problems which have resulted.

*Read before Section on Eye, Ear, Nose and Throat, Illinois State Medical Society, Moline, June 1, 1927.

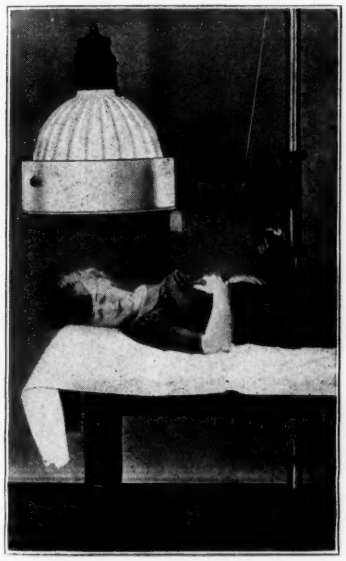

Fig. 1—Application of radiant heat lamp for acute otitis media

LIGHT THERAPY

Strictly speaking light therapy should imply the use of the visible spectrum only, but in this work it is admissable to include also the invisible or ultraviolet rays.

Fig. 2—Speculum for intra-aural ultra-violet irradiation

Radiant Heat Light. The use of radiant heat light is indicated chiefly in the acute stage of inflammatory processes. Thus in acute otitis

media a radiant heat lamp early applied to the affected ear will promptly lessen the otalgia and often obviate further treatment. (Fig. 1.) Radiant energy thus administered, will however not replace paracentesis of the membrana

Fig. 3—Bilateral speculum of intranasal ultra-violet irradiation

tympani, if this step is definitely indicated, but will prove of equal value after this procedure has been performed. Drainage will be promoted and the disease shortened in duration. The aural discharge will change in consistency much sooner and a dry ear will be the outcome in a comparatively shorter space of time than is usually the case.

The lamp which we employ is of clear transparent glass. Radiant energy is best transmitted through such a medium because heat by penetration is quite different from heat by convection. Ordinary glass will transmit only the luminous spectrum, leaving out the invisible rays of the infra-red and ultraviolet regions. This is most desirable in certain conditions where the maximum effect of deep therapy light is wanted.

Absorption of radiant energy follows penetration when dealing with the longer wave lengths. When this energy is absorbed into living tissue, it is converted into heat—and this brings about an activation of cellular metabolism —locally over the irradiated part, and distally, because of vasomotor changes that always follow hyperemia. All the benefits of an active hyperemia such as local vigorous drainage of the affected part, relief of stasis, which is the cause of cellular death, the disposal of morbid waste products, toxins and endotoxins, follow radiant energy. Thus, local heat from radiant light is decongestive locally or generally, because it does not permit stasis. Thermopenetration quite frequently has a bactericidal effect upon infected structures due to the fact that certain bacteria cannot live in all temperatures. Increased oxidation always follows increased metabolism. Hyperemia of the skin, with a concomitant depletion of the internal organs, produces a lowering of the blood pressure, while the respiration rate diminishes, and the respiratory exchange increases, increasing the removal of volatile waste products and carbon dioxide. Pain is relieved because of the sedative and decongestive action of heat upon nerve endings.

Radiant heat-light is indicated also in acute rhinitis and in acute sinusitis. Some of the reasons have already been mentioned. The congestion of the nasal and sinus mucosa is greatly reduced. The heat-light rays have a marked sedative effect frequently obviating the administration of analgesic drugs.

One of the important uses of radiant heat-light is in post-operative nasal treatment. After submucous resection of the nasal septum, on the

Fig. 4—Quartz rod for irradiation of posterior nares

second or third day, the application of the radiant heat lamp over the face is especially comforting. Twenty minutes of this treatment, two to three times daily, will aid materially in lessening the usual post operative symptoms, and

particularly so when the post operative reaction is severe.

Ultraviolet Light. Ultraviolet rays may be obtained from various artificial sources. The usual way is from carbon arc or mercury vapor quartz burners. The mercury vapor quartz lamps are more popular in this country. Two types of lamps are available, the water cooled and the air cooled. The water cooled apparatus is the one chiefly used by the otolaryngologist because with it, it is possible to convey the ultraviolet rays by means of quartz or rock crystal applicators into cavities. Recent studies have resulted in more direct methods of conveying the rays into certain cavities. Thus by means of a speculum which is attached to the window of a water cooled lamp it is possible to carry ultraviolet energy into the ear canal (Fig. 2), or into one side of the nose. For intranasal irradiation we have devised also a bilateral nasal speculum. Direct raying of the nasal membrane permits of longer treatments and more favorable results (Fig. 3).

The Quartz nasal rod may be attached by a suitable holder to the lamp window and thus employed for intranasal raying. It is more suitable for some conditions and particularly when it is desired to irradiate the posterior nares (Fig. 4). Often by combining this rod or *indirect* method with the *direct* method already described good effects may be secured.

Ultraviolet irradiations for chronic sinus disease is rational only when it is possible to carry a quartz applicator into the diseased sinus. The numerous claims of curing sinusitis by in-

Fig. 5—Active electrode over right mastoid area

tranasal ultraviolet irradiations are neither rational nor practical for obvious reasons.

Ultraviolet irradiations are of value sometimes in chronic otitis media of the suppurative type, but other forms of energy have given better results. This phase of the subject will be considered later.

General Ultraviolet Irradiations. We have recently called attention to the effect of ultraviolet irradiations on some general diseases

Fig. 6—Position of indifferent electrode

which influence the ear, nose and throat. For this purpose the air cooled lamp is utilized. Raying of the body produces an initial reaction of the skin in the form of an erythema, but this reaction may be more pronounced depending on the duration of the exposure and the distance of the lamp from the body surface. The systemic effect is manifested several hours after the dermal changes appear.

The so-called nasal neuroses, particularly vasomotor rhinitis, is a definite example of an affection in which the relief of nasal symptoms can be effected without treatment directed to the nose itself. Toxic agents may produce irritation of the mucous membranes of the ear, nose and throat or may so lower general body resistance as to provoke symptoms by reflex route.

To this may be added the "depressed state" occasionally resulting from nose and throat operations. This is really a condition in which the body is definitely reduced in vitality with resultant indifferent healing response and a subsequent protracted convalescence.

There are numerous factors which must be considered in ultraviolet raying of the body for the production of some special systemic action. These need not be discussed here because the literature is replete with reports of able experimental and clinical investigators.

DIATHERMY

The various indications in ear, nose and throat diseases for the use of diathermy make it necessary to speak only briefly of the more important ones.

As is well known by those who are familiar

with this work, diathermy may be applied either by the indirect or direct methods. As an example of the indirect method a plan of diathermizing the frontal sinuses may be cited. The technician fastens the cuff electrode around the wrist of one hand and the patient lies on the autocondensation pad which acts as the indifferent electrode. After the machine is in operation the technician gently massages the skin areas over the frontal sinuses with the cuffed hand which in reality is the active electrode. The degree of heat desired can be easily regulated by the rheostat and the spark gap.

The direct method involves the use of metal, sponge, or mesh-covered electrodes which are fastened in some manner to the part to be diathermized. This method of applying diathermy to the eyes, the ears and the sinuses has been greatly facilitated by a device in the form of a head band to which by suitable locking or clamping posts the electrodes may be fastened

Fig. 7—Apparatus for metallic ionization in purulent otitis media

by means of rods and held firmly in contact with any part about the head. For the antrum, for instance, the smaller or active electrode is placed over the antral surface on the face and the larger or indifferent electrode is placed on the nape of the neck. If it is desired to diathermize the right ear, the active electrode is placed over the right mastoid area (Fig. 5) and the indifferent electrode on the side of the face opposite to the affected ear (Fig. 6). There are definite reasons for this method of application, and inasmuch as these have already been elaborated upon in earlier communications, they will not be included in this paper.

Diathermy may be administered also by means of vacuum, non-vacuum and graphite glass electrodes. Intranasal diathermy is of value for relieving the crustation of atrophic rhinitis. For this purpose a vacuum electrode is used. The electrode is so shaped as to fit into the nasal chamber. The strength of the current will depend on the patient's tolerance.

When diathermy is to be applied to some superficial part covered with skin, a flat surface electrode either vacuum or non-vacuum will often serve the purpose. In such case, the indifferent electrode may be either the autocondensation pad, or a metallic cylinder which the patient holds snugly in his hands. It is claimed by some that graphite filled glass electrodes possess special advantages, but it is questionable whether they are of any added value in our specialty.

The more acceptable plan of applying diathermy for ears and sinuses is by the direct method. For intranasal work either the vacuum or non-vacuum electrode will answer depending upon the experiences of the otolaryngologist. Diathermy may be applied to other parts, such as the larynx or the neck by the direct method already described.

GALVANISM

Galvanism in the form of metallic ionization has a definite place in the therapy of certain intranasal and intra-aural diseases. For the reduction of large, boggy turbinates zinc ionization is of substantial value. The side of the nose to be treated should be packed with long, narrow strips of gauze saturated in a solution made of one grain of zinc sulphate to the ounce of water. Every available surface of the nasal mucosa should be covered. A copper wire attached to the positive pole of a galvanic apparatus should now be introduced in the wet packing and held firm by some dry cotton snugly packed at the nasal opening. Three to ten milliamperes of current for ten to fifteen minutes are sufficient for a single treatment, which, if necessary may be repeated in five to seven days. The good effects are not immediately apparent. There may be some slight reaction within the first twenty-four hours, after which inspection will reveal definite shrinkage of the turbinal bodies.

The sterilizing effect of zinc ionization for a chronically diseased sinus mucosa is indeed noteworthy. This procedure lends itself only for such purpose if a large intranasal opening has been made into the maxillary antrum, or post-operatively when a sinus cavity is easily accessible. The method is similar to that described for intranasal work.

The most gratifying results with zinc ionization have been obtained in chronic purulent otitis media of the uncomplicated type. If the drum perforation is central and large enough to permit the zinc solution to pass through it, the aural discharge will frequently be reduced to a minimum with one treatment.

The method has been simplified by a leather strap arrangement (Fig. 7), which encircles the patient's head and forehead. To this strap is attached a rubber ear speculum fastened on a ball and socket joint and easily movable and adjustable to any desired position. The speculum is fixed tightly by a clamp screw after being introduced into the affected ear. The speculum is then filled with a weak zinc solution to a point where contact is made by a small rod, to which is connected the positive wire leading from a galvanic apparatus. The indifferent electrode is a moist pad which is attached to the forearm or any other body surface. To this indifferent electrode the negative pole is attached. Now the circuit is complete. Two to four milliamperes of current are passed for ten minutes. It should be stated that this method assumes a preliminary cleansing of the ear canal. If irrigation is necessary for this purpose the same weak zinc solution which is used in the ionization work will probably be more satisfactory than water.

Friel has treated over six hundred (600) patients with zinc ionization and gives some very interesting reports of successful results obtained in a large percentage of the cases. Our own series comprises over fifty cases with cessation of aural discharge in more than sixty per cent.

SUMMARY AND CONCLUSIONS

1. Improved results in many aural and rhinological conditions have prompted a continued use of physical agents.

2. Radiant heat-light is indicated chiefly in acute inflammatory processes.

3. Ultra-violet energy has given encouraging results in nasal and aural affections and also in some general diseases which influence the ear, nose and throat.

4. Diathermy may be applied either by the direct or indirect methods to the nasal accessory sinuses, the ears, the larynx or to other parts.

5. The direct method has been greatly simplified by special apparatus and electrodes.

6. Metallic ionization has been employed with good effects in some intranasal and intra-aural diseases but has given the most gratifying results in chronic purulent otitis media of the uncomplicated type.

BIBLIOGRAPHY

1. Hollender, A. R. and Cottle, M. H.: Physical therapy in Diseases of the Eye, Ear, Nose and Throat, The Macmillan Company, New York, 1926.

2. ..... Clinical and Experimental Study with Some Physical Agents in Partial Deafness, Archives of Otolaryngology, April, 1926, III, 338-348.

3. ..... Diathermic Studies on the Eye and Ear, Archives of Otolaryngology May, 1926.

4. ..... Radiant Energy in the Treatment of Otitis Media, Eye, Ear, Nose and Throat Monthly, February, 1925, IV, No. 1.

5. ..... Newer Developments in Otolaryngologic Therapy, Archives of Physical Therapy, X-ray, Radium, January, 1927.

6. ..... Recent Advance in the Treatment of Nasal Accessory Sinus Disease, Eye, Ear, Nose and Throat Monthly, March, 1926.

7. ..... Effect of Ultra-violet Irradiation on Some General Diseases Influencing the Ear, Nose and Throat, Chicago Medical Recorder, February, 1927, Vol. xxix, No. 2.

8. Novak, F. J., Jr., and Hollender, A. R.: Influence of Ultra-violet Irradiation on Calcium Content of the Blood Serum in Hay Fever, Hyperesthetic Rhinitis and the Asthmas, J. A. M. A., December 15, 1923, LXXXI, 2003-2007.

9. Beck, J. C., and Pollock, H. L.: Electrotherapeutic Measures Used in Practice of Otolaryngology, Ann. Otol. Rhin. and Laryn., June, 1925.

10. Friel, A. R.: Statistics of Results of Zinc Ionization in Chronic Otorrhea in Over 600 Cases, Proc. Royal Society Med. (Sec. Otol.) January, 1925.

DISCUSSION

Dr. F. L. Alloway, Champaign: It is not many years since some of the most prominent physicians in the United States said that bath tubs would be the ruination of the country. The same thing applies in this case and I do not think it is just, at this time, to hop on diathermy. There have been wonderful things demonstrated in government work, in private practice and in our own clinics, and why should they be cast aside for the methods that have been in use so many years? Like washing out with peroxide—I think diathermy is better than that. We never treat deafness without making a diagnosis so far as we are capable, and we treat it accordingly. There is one thing I would like to caution you about. There are dangers connected with diathermy about the head. I had three cases of senile cataract where frontal sinus treatment was given by diathermy after the sinus was opened; these senile cataracts came to maturity in three weeks. You must examine the lens in older patients for senile cataract before treating with diathermy.

Dr. Harry Pollock, Chicago: I wish to correct Dr. Hollender's statement that I condemned galvanism and diathermy which he can confirm by looking up the literature. I do condemn, however, reports that are issued without any statistics as to diagnosis. I want to corroborate most of the statements made by the speaker since I have had similar results. In a previous paper I made the statement that every new mechanical device is used in altogether too many pathological con-

ditions for the reason that the manufacturers claim excellent results in all sorts of diseases (another selling inducement). We have tried out all sorts of physio-therapy apparati and we find a great many of them useful in a limited number of conditions, as for example; diathermy, ultra-violet radiation, radiant heat, etc. I have never used zinc ionization and know nothing personally of its use but reports from reliable authors of literature are very favorable.

Dr. A. R. Hollender, Chicago: Although the present methods of applying physical therapy in Eye, Ear, Nose and Throat work are quite satisfactory, there is no doubt but that improvement will be made from time to time. No one will dispute the fact that in order to obtain good results, careful technique is an essential factor. The reasons why many physicians have obtained poor results thus far, are quite obvious to those who are using the utmost care and diligence in the application of proper technique. I should like to call attention at this time to the preliminary work with ultraviolet irradiations in hyperesthetic rhinitis. Many of you will recall the original report which was published in the Journal A. M. A., in December, 1923. These investigations were conducted by Dr. Frank J. Novak, Jr., of Chicago and myself. Several otolaryngologists have obtained equally good results in hyperesthetic rhinitis with ultraviolet light. I should like to mention in particular, the recent report of Drs. Beck and Pollock, published in the Annals of Otology. Drs. Beck and Pollock were able to render symptomatic free, all of a series of twenty-five cases of hyperesthetic rhinitis. There certainly can be no more convincing evidence than this, that ultraviolet light acts in some way to alter the metabolic factors involved in hyperesthetic rhinitis, and in so doing to ameliorate the disagreeable symptoms of this baffling affection.

It should be emphasized again that proper technique is the all essential feature. Those of us who are employing physical therapy in Eye, Ear, Nose and Throat practice are doing so, not because we are physiotherapists; primarily we are otolaryngologists. However, if we can obtain better results by adding the use of physical agents to some of the older methods, which have not been altogether satisfactory, we believe that we are giving our patients the benefits of some of the procedures which scientific medicine has advanced during the past decade.

CHRONIC ARTHROPATHIES*

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The medical wards of the Hospitals of Indiana University, like those of all State clinics I presume, were from the first besieged by no one group of patients more frequently and more insistently than by those suffering from chronic arthritis. At first we used every possible tactic to avoid receiving these patients, on the grounds that we could do so little for them, that they were likely to occupy the beds for months instead of for weeks, etc., but later this group became so interesting to us that now we not only welcome them but even through our State Medical Journal have asked the doctors to send more of them. As a result we have come into contact with a group of over 400, of cases of varying interest, some of whom have remained in our wards for from one to twenty-four months, and many of whom have returned twice or oftener.

In the few minutes now at our disposal we can touch on but a very few points of this extensive subject and so will limit ourselves chiefly to one single group, that of those cases which from the first show trophic disturbances leading to atrophic lesions. We would at the outset state that we still follow the old nomenclature and use the term arthritis deformans for all forms of chronic symmetrical poly-arthritis which lead to visible deformities of the joints and which are not due to a known infection (as tuberculosis, lues and the gonococcus). We recognize that these cases may be divided on the basis of their external and Roentgenological manifestations into the hypotrophic and atrophic groups, but we reserve the term atrophic arthritis for the cases which from the first have shown trophic disturbances: paresthesias, atrophy of the muscles, trophic changes in the skin of the finger tips and nails and, especially, thinning of the joint cartillages. We recognize, as pathologists and Roentgenologists have pointed out, that atrophy is a process sooner or later common to all types, and that some cases which clinically belong in the so-called infectious group (because of the history of early acute inflammatory periods, of their association with tonsillitis and sinusitis, and the presence of definitely infectious complications and sequelae, such as bronchitis, bronchopneumonia, endocarditis, etc.) may finally present a clinical picture similar to that described above. Excluding these cases there is, nevertheless, a group which, judged especially by their earlier stages and their later clinical course, deserves the special designation "atrophic arthritis."

It will be necessary at this point to mention

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etiology, but only in passing, since one's methods of treatment must in some degree be influenced by his working hypothesis as to the cause of the condition he is to treat. Nevertheless, we use the word "cause" much more guardedly than we did a few years ago. We now speak of "groups" or "chains" of etiological factors. We know, for illustration, that *Bacillus typhosus* is the specific etiological factor in the causation of typhoid fever, but we also know that *Bacillus typhosus* alone cannot "cause" typhoid fever, that is, not unless the patient is susceptible. We know that *Bacillus tuberculosis* is the specific etiological factor of the disease we call pulmonary tuberculosis, and yet this organism does not always attack the lung of each patient it infects. That is, individuals differ in their susceptibilities to pathogenic organisms, but also the different tissues of the same person have different susceptibilities to the same germ.

The chronic arthropathies give us excellent illustrations of the importance of the differing susceptibilities of different individuals, as well as of the differing susceptibilities of the different tissues of these patients; also of those differences in the reactions of the tissues to infection or injury which determine whether the result shall be an hyperthophy with inflammatory exudate, an atrophy, etc.

Recently, also, our ideas of etiology have undergone another important modification, for we have learned to recognize that many infections are not the single process we had imagined them to be but are complex. For this reason we speak of the "team play" of organisms; or we use the following still better illustration borrowed from agriculture. The farmer in order to obtain a crop must first plow, then harrow, then sow, and then cultivate, if later he may reap. These five processes are very different and yet they must follow each other in one definite sequence. So, in the production of a chronic atrophic arthropathy, we can see evidences of several etiological factors following each other in definite sequence: injury, infection, emotional distress, endocrine disturbances, secondary infections, etc.

Since our attention was called to the importance of focal infections, it has been assumed that all forms of chronic arthritis were due to some infection, hence the favorite treatment has been to remove tonsils, pull teeth, drain nasal sinuses, remove the appendix, drain the gall bladder, mutilate the prostate or female pelvic organs, etc.

While the cases of the so-called primary atrophic chronic arthritis often do give a suggestive history of preceding infections, yet this history is not as definite as in those of the hypertrophic group. Certainly infected tonsils, infected teeth, etc., should receive radical treatment, for injured joints are splendid points of least resistance, and germs which were not the plow may, like the harrow, add to the injury of the joint. Nevertheless, proof of infection in these joints is hard to obtain. Our bacteriologists have made repeated blood cultures, but with very little success. True, they were isolated organisms from the blood, but have been unable to convince themselves that these were the pathogenic agents which started the arthritis. They have made cultures from the fluid within the joint and from the tissue lymph around the joints, and with the same success. They have removed enlarged lymph nodes which must drain the infected joints, and with variable success. We have repeatedly tried vaccine treatment, both stock and autogenous, we have used the nonspecific proteids, all without convincing result. Our chemists also have estimated the blood calcium only to find it normal: they have determined quantitatively the blood lactic acid too, and found that normal also.

When considering focal infections we recognize the importance of the small buried tonsils which for years may have given no symptoms (indeed, some tonsils would seem to do more harm after they have ceased causing attacks of local sore throat, for the reason, possibly, that when buried the infection reaches only the blood stream); and now we stress the infections of the posterior nasal sinuses also. Indeed, it is only about two years ago that Granger proposed a method of x-ray examination which adequately reveals the condition of these posterior ethmoidal and sphenoidal sinuses, the condition of which often cannot be determined by direct examination or by transillumination. Also, we feel that the mediastinal lymph glands, and especially those at the hila of the lungs, deserve more attention since they are often infected by the sinuses. To

demonstrate them we use the lateral as well as the anteroposterior views of the chest. And so we study all the other foci of infection. Nevertheless, we do not recommend an operation on a focus of infection because the patient has arthritis, but only when the condition of that focus is such that we would recommend the operation even though the patient were otherwise quite well. Again, we recognize that the joints themselves may be important foci spreading the infection to other joints. This may explain the post-traumatic cases. In these, following an injury to a single joint, an arthritis develops which may for several months remain limited to that joint. Then, in an almost explosive manner, the arthritis involves many other joints as well.

Of course we have seen splendid results immediately following such operations. We are mindful of the woman helpless with chronic arthritis who, the evening after her teeth were pulled, walked down stairs for the first time for weeks and joined her delighted family at the dinner table, etc. One of our worst cases was so surprised at the general improvement which followed immediately the removal of one epitrochlear gland for bacteriological purposes that she begged us to operate on the other elbow also. We have seen even more striking improvement to follow general anesthesia without any operation at all. Such temporary remissions are very spectacular but deceptive. They explain, we presume, some of the miracles of quacks and of faith cure healers, and, in some measure also, the piles of abandoned crutches and canes at shrines; but, more important to us, they encourage us to study the importance of the emotional element in determining the clinical features of chronic arthritis, believing that this may prove to be an important element of our future therapy.

In the clinical picture presented by some of the cases of atrophic arthritis which have interested us most an endocrine element often is present. It is well known that these cases often begin during, and that their course is markedly modified by, pregnancy and the menopause. Recently we have become much interested in cases which followed periods of great emotional distress, believing these to belong to the endocrine group since the glands of internal secretion would seem to be liaison mechanisms between the emotional life and the physical body.

The importance of the gastrointestinal canal in controlling the clinical picture of many cases of chronic arthritis, whatever the primary etiology of the cases may have been, has long been recognized. Certainly the influence of constipation is often evident, while others ascribe their acute exacerbations to periods of diarrhea. Some speak of the immediate influence on the arthritis of certain foods, using in this connection such terms as "sensitization," "anaphylactic reaction," proteid shock," etc., terms which we feel are quite unwarranted. While we would by no means deny the possibility, yet in the cases of chronic arthritis we have never been able to convince ourselves of the presence of any specific susceptibility to certain foods, or of any phenomena which deserve the term "anaphylactic." For illustration, the young woman whose arthritis was worse after tomatoes, strawberries and citrus fruits, stood without reaction large doses of sodium citrate injected directly into her veins; the use of a variety of non-specific proteids has not developed any interesting reactions, etc. To us, however, the subject of the flora of the bowel is interesting, and the theory that various foods affect the body by modifying this flora is attractive. For this reason we begin our treatment by attempting to crowd out from the bowel as completely as we may be able all gram-positive organisms by a pure buttermilk diet of at least four quarts a day, for periods of at least one week long, and the results are at least encouraging.

The results of our treatment would indicate that of the entire series of cases of chronic arthritis 43% improved much, 38% slightly, and 19% not at all.

In the therapy one of the most important general measures is psychotherapy. The patient's worries must be relieved; the patient must be encouraged. He must undertake with enthusiasm physical exercises which are disagreeable and painful. He must have faith that they will be successful. We often say that the one willing to shed the most tears (on account of pain) will get the best results. He must not be allowed to "stagnate in bed." There is no surer way of making the disease progressive.

We recommend that, before we begin our treatments, all definite focal infections be removed or drained. Nevertheless, no matter how serious or how hopeful the arthritis we do not operate or

any focus unless we would do so also were the patient otherwise well. That is, each focus must be decided on its own merits and not on the basis of its possible relationship to the arthritis. If the surgeons will work rapidly, even though the work be less well done, we get better results and with fewer reactions after the operation than if they work with better attention to details.

Our diet begins with one week of buttermilk only, at least 4 quarts a day, attempting in this way to modify the flora of the bowel. After that the diet is more liberal, and planned as for any case we are trying to "build up."

Physical therapy is of great importance. Heat is used in any form, but with the one purpose of relaxing the muscles and diminishing the pain. This is important since, after all, the real therapy resides in the active and passive movements of the affected joints. Anything, therefore, which makes possible more motion is of benefit, and heat is excellent for this. The ultraviolet light is useful for its general tonic effects. Exercise is required at prescribed intervals, up to the point of fatigue. Exercise, however, does not necessarily mean walking, for one reason why the hips, knees and ankles are so often most involved is that the weight of the body is brought to play on these joints with each step. The patient is asked, therefore, to exercise the lower extremities while lying flat on his back in bed, making with them movements similar to the calisthenic movements of the upper extremities. It is the amplitude of the motions which we seek to increase, not directly their strength. If these exercises are followed by fatigue or pain which lasts more than an hour, or if they cause a little fever, they are discontinued for a while, then resumed, but with less vigor. Mere pain is no contraindicator. We urge them to the limit, always requiring of the patient that which seems to him unreasonable and impossible. We have tried all autogenous and all stock vaccines but without definite benefit. Of the medicines we use amidoxyl intravenously, asparin, arsenic, and, especially, cod liver oil. The improvement is slow but in the long run the results are encouraging.

DISCUSSION

Dr. D. E. Markson, Chicago: We all should congratulate Dr. Emerson for his very excellent summary of the progress in the treatment of chronic arthritis. He has covered the most important newer developments quite thoroughly.

Arthritis is certainly a puzzling problem, particularly from the economic side of the question. In England the Industrial Commission is paying out two million pounds a year as a result of crippling due to arthritis. In London alone, 60,000 are pensioned yearly as result of this disease. In Denmark 10% of the total male population is affected with chronic rheumatism. In Sweden, it represents 9.1% of permanent disability. In this country it represents an incidence greater than that of tuberculosis.

An international committee representing six countries meets once a year in London to discuss the newer phases of chronic rheumatism. In this country the contributions and tabulations from the many clinics would fill volumes.

Heredity seems to play some role. There is something inherent in the cartilages or joint structure which predisposes to arthritis. Dr. Ross has shown, in a small series, that children born of rheumatic parents are more susceptible to rheumatism and arthritis than those of non-arthritic parents. He advises early removal of foci of infection in these children.

At the Northwestern University clinics we have handled approximately four hundred cases of chronic arthritis. For the purpose of clinical classification we use that of Goldthwait: Atrophic, hypertrophic and chronic infections types of arthritis. Dr. Emerson has pointed out the many etiologic factors now considered in chronic arthritis. I want to add to his list the work of Eli on the ameba as a causative factor. He claims he can demonstrate ameba in the stools of 60% of the cases of chronic arthritis where five consecutive stools are examined. He further claims emetine relieves these patients. We have not been able to confirm this work at the clinic. Intestinal statis has been given a great deal of prominence by Rea Smith of Los Angeles. The work of Burbank, of New York, probably has something of value. I am sorry Dr. Mayer did not take this up in his discussion. Metabolic studies of two hundred cases has led us to the same conclusions arrived at by other observers. It is helpful but not conclusive.

Because of our limited time, I want to add just a few points regarding the treatment. Physiotherapy, as Dr. Emerson suggested, is of definite value if properly carried out in a well organized department. Amiodoxyl benzoate is of definite value in treatment of infectious arthritis. Arsenic in the form of Fowler's solution, by mouth, should be given to every patient, or in the form of neosalvarsan intravenously in increasing weekly doses. Sulpharsphenamine intramuscularly to the older patients, with arteriosclerosis. We are also trying occupational training with the idea of helping establish function in the affected joints. In a few cases we have been able to re-occupation them to work best suited to their condition.

In conclusion, we agree with Dr. Emerson in that a well organized clinic offers the best place to treat chronic arthritis.

Dr. Rosalie M. Ladova, Chicago: I have greatly enjoyed the address of Dr. Emerson and for one reason: His stand seems to be so broad and original. All the time I have been in the practice of medicine I have felt that the psychic element was not taken into account by many physicians who are practicing. It seemed that the practice of medicine was a mechanical process. We take the laboratory findings, make the physical examination, then we make our diagnosis and we treat the disease. Surely our mind plays a very important part in our lives and is an important element in disease.

The point that he brought out that a serious accident entailing extreme fear or an emotional experience, causing mental depression, would affect a patient's resistance, interfere with normal metabolism and make him more liable to arthritis or some grave nervous trouble, I think is very well taken. I believe that if doctors considered the psychic condition, the psychic experiences of their patients and especially the women, who are more sensitive and emotional and are more given to different psychic troubles, they would do a great deal better and I think the profession would be better able to keep the great proportion of the public that deserts our profession and goes to the other workers in the field who do consider the mind and study the mind and psychic experiences of the patients that they read. Psychic disturbances furnish a fertile soil for quackery and cults of all kinds.

Dr. Lawrence H. Mayers, Chicago: I was very glad to hear Dr. Emerson say that he has treated about four hundred arthritics. I think it is necessary for a man to treat about that many cases before he realizes what the problem is.

In any discussion of arthritis the most difficult thing is to try to find out what type of arthritis the individual is discussing, and we recognize that there are almost as many ways of treating arthritis as we find classifications for the malady. In a discussion of percentages of the various classifications of cases and results, it is difficult to get the type of information that we want. In the first place, we ought to know the age of the patient, the duration of the disease in years; whether the patient has had the disease for one year or less, one to three years, three to five years, five to ten years or more; the length of treatment in months, whether they have been treated one to three months, three to six months, six to nine months, nine to twelve months, or more than twelve months. We should also know the number of cases that receive no relief, those that show no improvement and a description of what we mean by improvement, much improved, and symptom-free. I appreciate the fact that it is difficult to use the word cured for a chronic disease.

Dr. Emerson told us that in one group of cases he obtained thirty per cent. of good results and forty-seven per cent. of good results in another group. In order that we can compare Dr. Emerson's work with the work of others, we should know the type of arthritis he refers to, whether it is atrophic, hypertrophic, or mixed. The term "arthritis deformans" does not fully describe the clinical picture of these patients. For example, we know we have a different problem to deal with when we are treating a patient who has had arthritis for one month or six months, than when treating a patient who has had the disease for more than ten years. About thirty per cent. of arthritics do well without treatment, but the larger part of this percentage have had the disease for months rather than years.

In regard to the foci of infection most of the arthritics who have had the disease for a period of a few years, have had various foci of infection removed. In a group of four hundred patients it would be interesting to know how many of these patients have had teeth extracted, tonsils removed, gall-bladders removed, and sinuses drained with or without relief; or when a focus of infection was disturbed did it light up the condition or did it make the condition worse or better and what was the interval. In listing all the operations and various painful procedures that are done to find the foci of infection we must realize that, in many instances, searching for the cause is more hazardous and painful than having the disease. It is difficult to get results in any disease when both the methods of diagnosis and treatment are so painful and debilitating, and more especially when they require a long period of hospitalization.

In carrying out various surgical procedures more care should be taken in selecting suitable risks, for example—when an arthroplasty is resorted to on a weight bearing joint, it is important to know whether or not the patient has sufficient strength and freedom from arthritic changes in his shoulders and wrists to prevent the use of crutches and canes during his convalescence. Such a procedure would make a patient permanently disabled.

It is interesting to point out the great number of arthritic patients who have had the disease for a number of years, that have run the full gamut of medical and surgical procedures. This means that there is a psychological factor to be considered. A fear complex must be overcome because most of these patients have had major surgery, prolonged hospitalization for traction, for casts, for physiotherapy, for foreign protein shocks; years of medical treatment both at home and at health resorts; also a variety of desperate regimes varying with the number of consultants. All these experiences produce a sophisticated class of patients, the like of which no other disease has to its credit. Many of these patients seek relief without the further necessity of painful treatment or hospitalization.

I sincerely believe that any man should be commended, who has the perseverance and will treat four hundred cases of arthritis, as I happen to know just how much work that is, and in view of discouragement, I think Dr. Emerson has given us a real contribution. The types of therapy that he has pointed out are definitely indicated and they should only be used in such an institution as that with which Dr. Emerson is associated.

Dr. Emerson: May I express my appreciation of the kindness with which you have received our remarks.

which concerned such a broad subject that of necessity they were expressed unguarded by necessary qualifications and perhaps less conservatively than I had intended.

Of course the diagnostic "arthritis deformans," as I said at the very beginning, is a debatable term, but we use it for those forms of chronic arthritis which are not known to be infectious and which lead to deformity. Whether there is any real difference between the atrophic or hypertrophic cases is debatable. Pathologists and roentgenologists says that both processes enter into each case and that the difference is chiefly a question of degree; but clinically there is one group of cases of atrophic arthritis which we consider a separate disease.

I must protest that I never used the term "cure." Certainly we have not "cured" forty-eight per cent. of our cases; no, not one. I said they were "greatly improved"; improved enough to go and get married; improved so that they were happy; improved enough so that they were able to return to work; but by no means were they cured.

Our highest function towards these arthropathies, however, is to stop them as early as possible, and prevent all the disability possible. After they have developed, they have, as Osler used to say, a silver lining, for the chronic arthritis sooner or later stops, leaving the patient crippled. It is our duty to see that this crippling is just as slight as possible.

I only wish that Dr. Mayers had spoken more of the question of the vaccine treatment of these cases, because, while we personally have not been able to get far with it, yet we know that is the right way. We know that Nature cures her infections by autogenous vaccines; we, as yet, have not found out, however, how Nature does it, although we do know that Nature never uses a hypodermic needle. Nature has certain ways of applying her vaccines locally, I presume. I only wish the time allowed us to discuss the question of regional differences of the body to therapy. If you tell a nurse to give a patient suffering from pleurisy or angina pectoris one quarter of a grain of morphin, doubtless she will inject it into the triceps region. I don't know where she should inject it, but am pretty sure that that is the wrong place. There are certain viscero-cutaneous relationships which we must study. It makes a difference just how the germ gets into the body and it makes a difference into what tissue and where we inject our vaccines.

Dr. Markson spoke of the importance of the disease arthritis. Denmark has separate State hospitals for arthritis only. America may be forced to build them sooner or later.

I feel the emotional element is very, very important, but you can't depend on the patients to aid you in this sphere, for patients do not understand their emotional states. It is just as important that a sociologist go into this question and solve it for us as it is that the x-ray man get his plates, or that the serologist apply the serum reactions for us. What the patient says may or may not be valuable; it will, however, always be helpful; helpful to specialized workers who know how to get the desired material.

We did not go into the question of occupational therapy. That is of value, if for nothing else, as a form of exercise, and a very interesting form it is. Our feeling is that it should be done always with a free arm movement of wide amplitude.

MAJOR POINTS IN THE TREATMENT OF FRACTURES*

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The literature of the present day contains numerous articles on fractures, the reason being the ever increasing incidence of fractures as a result of the high pressure of modern industry and the daily increase in the number of automobiles on the streets and highways.

It is only during the past decade or two that real progress has been made in the treatment of fractures. Knowledge of fractures has been greatly augmented by the experiences of the World War.

In presenting this paper I am attempting to stress some of the salient points gleaned from personal experiences in the orthopedic department of the American Expeditionary Forces, and from industrial and private practice since the close of the War.

Despite our vast experience, improved apparatus, and classification and standardization of treatment by the Fracture Committee,[1] poor results following ordinary fractures are too frequently seen. There are several important reasons for these poor results, namely, the lack of proper preliminary instruction and training in the medical schools and hospitals, the multiplicity of procedures and confusion of ideas, the inefficient fracture equipment of the majority of hospitals, and last, the negligence of the surgeon in checking up on the position of the fragments and the efficiency of the apparatus.

Apparatus and Equipment. The inadequate equipment of the splint room or fracture department of the average hospital is a sad commentary on our efficiency and organization. *A fracture is a mechanical defect in a human*

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machine. It should be treated with the same precision and with the same objective as a defective automobile, i. e., proper tools and apparatus are necessary to restore normal function, or as nearly normal as possible.

The ordinary fracture equipment is not complicated, expensive, nor difficult to obtain, so that even the smaller hospitals have no excuse for lack of equipment. By ordinary equipment is meant, an assortment of Thomas splints for legs and arms, Jones humerus traction, cockup, elbow, knee and ankle splints, Cabot posterior, Hodgen's and board splints. Weights, pulleys, ropes, hooks and Balkan frames are also inexpensive essentials. Stockinet, sheet wadding and plaster of Paris bandages must always be at hand. In the writer's experience, the fracture table with the head fluorscope and portable roentgen machine have been very valuable.

Fig. 1—Method of reduction of fractured femur on McKenna fracture table, using a head fluoroscope and portable roentgen machine

Examination. Before undertaking the treatment of a fracture, one must carefully consider not only the fractured part but the patient in general. The age, occupation and general physical condition may have an important bearing on the method of treatment. Is the fracture in the upper or in the lower extremity? Is it in the shaft or near or into the joint? Is it simple or compound? Is it complete or incomplete (greenstick)? What is the contour of the part? Is the blood-supply of the extremity impaired? Is there any shortening? These and numerous other important considerations must be borne in mind in determining the choice of the method of treatment.

Repair of Bone. The repair of normal bone begins immediately after the occurrence of the fracture. Bancroft[2] has shown that in four or five days there is a beginning organization of the blood clot which always follows a fracture, and in about ten days a thick glue-like material, the early callus, is formed. This joins the bone ends and infiltrates the adjacent soft parts. Bancroft further showed that if a rabbit's bone is broken and the fragments are allowed to override, it is almost impossible to draw these ends down to overcome the shortening after seven days, *even after excising the surrounding muscles.* This important experiment shows the peculiar consistency and characteristics of callus, and shows why it is so often impossible, even with the patient under an anesthetic, to reduce such a deformity. Maximum continuous traction exerted over a considerable period of time will usually overcome this.

There is an internal, intermediate and external callus formed. The temporary callus is

large and soft, but as the lime salts are increased and more dense bone forms, the callus shrinks and becomes firmer. *The greater the comminution of the bone, the greater the callus.*

TREATMENT

Before attempting to treat fractures, one should have a thorough knowledge of the anatomy and

Fig. 2—(a) Operating Fluoroscope; (b) Hand Fluoroscope

physiology of the parts, and an understanding of the principles of mechanics. An interesting, instructive text-book of physics, such as that of A. Wilmer Duff, is invaluable to those who treat fractures.

Our aim in the treatment of fractures should be to obtain, as nearly as possible, anatomical reposition of the fragments, and to *maintain* this position by proper splinting until union occurs.

It may be stated as a general rule that *the closer the fracture is to a joint, the more imperative is the anatomical reposition of the fragments.*

Mal-union, delayed union and non-union must be prevented.

In attempting to prevent mal-union, the causes must be investigated, namely: improper reduction or proper reduction followed by improper splinting. Mal-union is preventable. One of the forms of mal-union is overriding. In the shaft of the humerus this may not always cause deformity nor limit function, but in the lower extremity, overriding is a more serious condition and is usually due to insufficient early extension of the fragments.

Another form of mal-union is angulation. One may have end-to-end apposition with angulation, or overriding with angulation. If, in a fracture of the shaft of a long bone, there is end-to-end apposition, either partial or complete, with perfect alignment of the fragments, then there should be a good result, providing that the position is maintained and also that none of the factors which cause non-union are present. Rotation of the lower fragment upon the upper may cause an inward or outward rotation of the forearm or leg, which is a serious disability. Failure to maintain the normal anterior bowing of the femur is merely another form of angulation.

The causes of non-union are: 1, Failure of anatomical reduction; 2, Interposition of soft parts; 3, Lack of, or improper immobilization; 4, Occlusion of the nutrient artery; 5, Infection; 6, Syphilis; 7, Diabetes; 8, The inhibiting of callus by synovial fluid.

Splints should be applied on the spot where the injury occurred to prevent unnecessary trauma to the soft parts (nerves, vessels and muscles). Lack of immediate splinting frequently converts a simple fracture into a com-

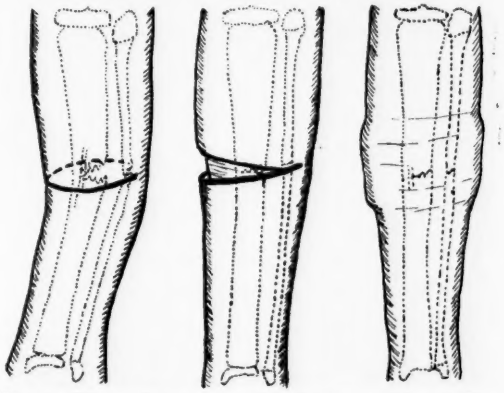

Fig. 3—Illustrating a greenstick fracture with angulation. (a) Cast applied without attempting to correct the deformity; (b) Cast cut through two-thirds of its circumference on the concave side and correction made, aligning the fragments; (c) The wedge filled in with plaster of Paris and sufficient additional turns of plaster bandage applied to hold the parts securely

pound fracture, the sharp fragments forcing their way through the tissues into the external world.

4a

4b

Fig. 4.—Roentgenograms of fracture of the middle third of the femur. (a) Before reduction; (b) Ten weeks later. This patient was treated by moleskin adhesive traction in a Thomas splint with a Balkan frame for four weeks followed by a plaster of Paris spica for three weeks

Reduction, preferably under general anesthesia, should be accomplished *at once*. In almost every case, it is negligence to wait for the swelling to subside before beginning reduction.

Examination, manipulation, and attempts at reduction must be very gentle. Either traction and counter-traction,[3] or angulation of the fragments to produce a hinged end-to-end apposition, are the most approved procedures. With a dentated fracture the hinged, end-to-end, apposition, i. e., carefully exaggerating the deformity and then straightening the extremity, may be the method of choice, and usually holds securely by the inter-locking of the tooth-like fracture ends. Emphasis should be placed upon the value of the head fluoroscope, fracture table, and portable roentgen machine, a combination which greatly simplifies reduction of fractures and allows a check-up during the application of the retentive apparatus. There is no groping in the dark with this method.

A molded splint of plaster of paris is very useful as a temporary appliance until the roentgenograms are taken. Frequently it can be used as a permanent apparatus. Whenever it is possible a circular plaster of paris cast should be applied after an immediate reduction.[4] One must bear in mind, however, that a fracture may be perfectly apposed and slip within the cast. It is sometimes necessary to split the cast to prevent circulatory constriction, but, in the hands of the surgeon who is expert in the use of plaster of Paris bandages, and with the proper facilities at hand for the application of a cast, it is usually unnecessary to split the cast.

It is a general rule that the joint above and below the site of fracture should be immobilized.

If one sees a neglected case several days after the injury, when the swelling is at its height, a Thomas splint or one of its modifications, or anterior and posterior board splints, or a moulded splint of plaster or paris is usually indicated.

In order to maintain the tonus of the parts, it is advisable to commence massage in the splint as soon as possible. This was recommended many years ago by Lucas Championniere, the noted French surgeon. As soon as it is possible, within the judgment of the surgeon, movement of adjacent joints should be started. This should not commence until the surgeon is certain that it will not interfere with the position of the

fragments. The masseuse or physiotherapist should work immediately under the direction of the surgeon, and early medical gymnastics should be very, very gentle. It is very evident that massage and movement of adjacent joints is impossible in a plaster of Paris cast, but it may be

Fig. 5—Anterior dislocation of the carpal semilunar bone

bivalved, that is, an anterior and posterior shell may be made, and the parts massaged and motion commenced.

The wedging of circular plaster of Paris casts should be a more frequent procedure. The writer has found it of great assistance in the treatment of greenstick, that is, incomplete fractures, and in the treatment of fractures which have been reduced and have excellent apposition but poor alignment. If greater length is desired, an incision is made circularly in the cast two-thirds of the way around on the side of the concavity and the lower fragment is brought into line with the upper. This can be done under the fluroscope. Then a small block of wood is placed in between the gaping edges and one or two plaster of paris bandages are wound around to reinforce the cast. It is frequently advisable, in greenstick fractures, to *apply the cast with the limb in its deformed position, then wedge the cast and straighten the limb.* (Fig. 3.) This usually completes the fracture but prevents displacement, which frequently occurs during the application of the cast.

Ordinary adhesive tape is usually inefficient and requires considerable readjustment and replacement. Moleskin adhesive properly applied or flannel strips with Sinclair glue or resinous glue with turpentine makes excellent traction possible. The limb should always be shaved before the traction bands are applied. Gentleness in manipulation and in application of traction bands lessens muscular contraction. Constriction should always be avoided. Some prefer fixed traction to the end of the Thomas splint,[5] the ring being fixed against the tuberosity of the ischium, while others prefer the weight and pulley.[3] In using the latter, the maximum weight necessary to obtain full length (sometimes as high as 50 pounds) should be applied as early as possible after the injury. By placing the maximum weight early and checking up with x-rays, it is found that the muscles are easily over-stretched and it is possible after a few days

Fig. 6—Vertical extension for fractured femur in a child four years old. It is frequently necessary to extend both limbs in this manner allowing the body to act as a counter weight. The weights, extending by overhead pulleys to the foot of the bed, are just sufficient to allow the buttocks to barely rest on the bed. (Courtesy Dr. L. Handelman.)

to reduce the amount of weight necessary to maintain the position.

Elevation of the lower end of the bed in fractures of the lower extremity prevents the patient from being pulled down by the weight to the foot of the bed, and eases the pressure of the ring on the tuberosity of the ischium.

The Thomas leg splint[6] or one of its modifications permits the daily measuring and inspection of the contour of the extremity, facilitates dressing of wounds in compound fractures and, with the proper suspension apparatus, permits ease in the movement of the patient for daily hygiene. For compound fractures near the hip joint, the Hodgens splint facilitates dressing of the wound. Tongs or calipers[7] are usually necessary for fractures in the lower one-third of the femur. The Steinman nail through the os calcis or the Sinclair skate are usually necessary for badly displaced spiral or oblique fractures of both bones of the leg.

It cannot be too strongly urged, that frequent roentgenograms, anteroposterior and latter, are necessary to check up on the position of the fragments.

It is frequently necessary to refracture a malunited bone to correct overriding or angulation. One must not hesitate to do this as soon as mal-union is discovered. One may be prone to permit a deformity with a soft callus to remain, when, by simply giving an anesthetic and placing the extremity over a block and applying force (the skin being previously prepared for a possible perforation), the bone is broken, and the proper amount of traction is applied and the deformity corrected. Should mal-union occur and permanent callus form, osteotomy is necessary to correct the deformity.

Non-union should be treated by autogenous bone-graft.[8] The most successful method consists of an intramedullary graft, with several osteo-periosteal wafers as described by Delan-

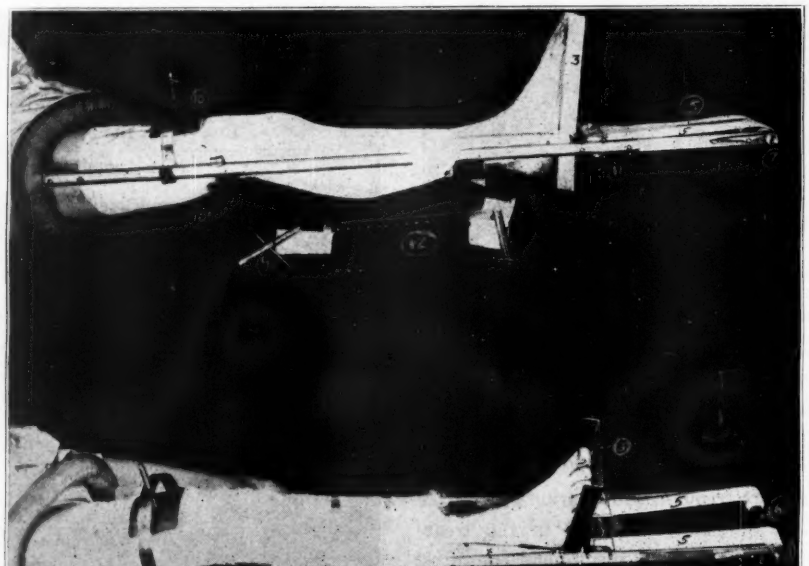

Fig. 7—Author's splint for fractures of the lower extremity showing traction bands (1) inserted into buckles (2) attached to foot plate (3) which has a thumb screw (4) allowing internal or external rotation. Webbing straps (5) are inserted into slot (6) which revolves on axle attached to ratchet (7) with spring lock (8). Key (9) is used for ratchet lock and for up and down pressure pads (10). During convalescence the set screws (11) may be removed and a walking caliper attachment (12) applied without removing the entire splint. The side bars and pressure pads are made of an aluminum compound which permits roentgen rays to penetrate.

geniere and Lewin.[9] Before attempting operative treatment, one must eliminate some of the organic causes of non-union.

Compound fractures [10, 11, 12] require early careful debridement, and exposure of the fracture site. This frequently prevents the usual sepsis, secondary abscesses, hemorrhages, sclerotic and lardaceous changes in the surrounding tissues, and visceral degenerative changes. The wound is immediately enlarged, foreign matter and devitalized tissue removed, and the medullary canal exposed. It is advisable to retain in situ all attached bone fragments in a comminuted fracture, and to remove all loose fragments with no periosteal attachment. A light vaseline gauze pack may be inserted, or the wound may be packed with gauze saturated with Dakin's solution and Dakin tubes inserted into the bottom of the wound, and the solution instilled every two hours. In selected cases it is possible to make a primary closure of the wound. There is a relatively high mortality in compound femur fractures due to hemorrhage, shock, and acute and chronic infection.

Fractures, dislocations and fracture-dislocations of the carpus, especially the os lunatum, occur more frequently than heretofore reported. Good lateral roentgenograms as well as anteroposterior are essential.

Median nerve paralysis frequently results from failure of reduction or violent attempts at reduction. The usual treatment of fracture or dislocation of the carpal semilunar is excision.

Bizarro,[13] of London, in an analysis of 213 forearm and leg fractures, states that classic Pott's and Colles' fractures are comparatively uncommon.

Immediate reduction of Colles' fracture by hyper-extension, traction and palmar flexion with ulnar deviation is imperative. A posterior molded plaster splint is applied. Extreme care must be used to prevent constriction about the elbow or forearm which may cause ischaemic paralysis. Movements of the fingers should begin on the second or third day, and removal of the cast on the eighth to twelfth day, when massage and careful passive and active motion of the fingers should be instituted. The cast should be reapplied at night, but during the day the patient may carry the forearm in a sling, the hand hanging in ulnar deviation. The cast may be discarded entirely after the third week.

The Jones position of extreme flexion is indicated in all fractures in or about the elbow joint, except fractures of the olecranon process, in which we place the forearm in full extension.

Fractures in the shaft of the humerus are divided into those of the upper, middle and lower thirds.[14] Those in the upper third usually require some form of abduction apparatus, either an aeroplane splint or plaster of Paris spica. The Thomas arm splint is frequently used, especially when it is desirable to keep the patient in bed.

The Jones humerus traction splint with coaptation splints and turnbuckles is very useful in fractures of the middle and lower thirds. It allows the patient to be ambulant. One must not forget to examine for possible musculo-spiral (radial) nerve injury.

The Mittledorf triangle and its modifications, such as the aluminum internal angular splint, are frequently used.

Fractures of the clavicle are best treated by the wooden board T splint, properly applied.

Fracture of the neck of the femur is comparatively common and is frequently improperly treated. It is the most common site for non-union. It is agreed that the Whitman method of inward rotation, traction, abduction and hyperextension, and immobilization with a long plaster spica extending from the toes to the exillae, is the best method of treatment of this form of fracture. This is done under general anesthesia on a traction table. The surgeon must not forget the importance of *first completely abducting the sound limb.* Impacted fractures of the neck of the femur are carefully immobilized in a plaster spica *without manipulation.*

Fractures of the shaft of the femur are divided into those of the upper, middle and lower thirds. Due to the gluteal and iliopsoas pull, the upper fragment is usually abducted and flexed in fractures of the upper third. The lower fragment must necessarily be brought into line with the upper.

The normal anterior bowing of the femur must be maintained in fractures of the middle third.

Fractures of the lower third of the femur are usually complicated by posterior displacement

of the distal fragment due to gastrocnemius pull. This can usually be corrected by skeletal traction applied by tongs to the femoral condyles. Traction is made in the longitudinal axis of the thigh with the knee flexed.

The Thomas leg splint or one of its modifications (Fig. 7), either with weight and pulley or fixed traction, is beyond doubt the appliance of choice in the treatment of fractures of the shaft of the femur. Vertical extension (Fig. 6) is efficacious in the treatment of fractures of the shaft of the femur in children.

Transverse fractures of the patella with separation require open operation and approximation with an absorbable suture preferably. If there is no separation, treatment by pressure above and below the patella and a long posterior splint is sufficient.

The Steinmann nail, either through the os calcis or just above it anterior to the tendon Achilles, is a very simple and efficient method of treating simple fractures of both bones of the leg. It may be used in selected compound fractures, although in these cases either a bridged (interrupted) cast, Sinclair skate with the Thomas splint or the writer's modified leg splint are preferred. (Fig. 7.)

In Pott's fracture, as soon as possible after the injury, the posteriorly displaced foot must be reduced and brought to a right angle with the leg and very slightly inverted. A circular cast is applied extending from the toes to about four inches above the knee. The cast is bivalved in about three weeks, and the limb is massaged daily and gently moved actively and passively and replaced in the cast. Protected weight bearing may usually begin about the eighth week.

Fractures of the metacarpals and phalanges may be treated by simply placing a three or four inch roller bandage in the palm of the hand and bandaging the hand and fingers over it, strapping it well. Unless there is marked displacement requiring traction, this treatment usually suffices.

Fractures into or near joints require special consideration owing to the possibility of ankylosis. The positions of election must be considered, e.g., in the shoulder, abduction to about 50 degrees, the elbow being slightly anterior to the coronal plane of the body. When there is a possibility of ankylosis of the elbow, it should be held at right angles. When there is a possibility of limitation of pronation and supination, the forearm should be held midway between the two, except when occupational use indicates otherwise.

In the wrist joint, the position of election is dorsiflexion; in the hip joint, slight abduction with the thigh extended and rotated slightly outward; in the knee joint, five to ten degrees of flexion, and in the ankle and foot the most favorable position is right angles with slight inversion.

Promiscuous open reductions and the use of metallic plates and sutures should be condemned. Occasionally a plate may be necessary, but the conditions requiring its use are exceptional. The writer advocates conservative attempts at reduction of all fractures, and believes that most open reductions can be prevented by proper early conservative treatment. Many open reductions are done unnecessarily or unwittingly. Open reductions are, however, frequently necessary in fractures of the olecranon, patella and fractures of both bones of the forearm and leg. Reduction in these can usually be maintained by strong absorbable sutures and proper splinting.

After treatment. The time for removal of apparatus or splitting of casts depends upon the judgment of the surgeon. Roentgenograms should show proper position and sufficient callus. It is usually advisable to remove the apparatus at first only for physical therapy, massage, guided exercises, contrast baths, diathermy, etc., and then replace the apparatus. Later, the splint or cast is removed during the day and only applied at night to prevent injury during sleep.

The after treatment depends upon the part involved, the age, and the general physical and mental condition of the patient. Retentive apparatus may be removed much earlier in upper extremity fractures than in lower; much earlier in younger patients than in older. It is found that restricted motion in adjacent joints following fractures in children or young adults respond to treatment much better than in older patients. Orr has said that inefficient immobilization and too early mobilization are two of the principal causes of poor results in the treatment of fractures. It may be added that too early unprotected weight-bearing in fractures of the bones of the lower extremity is another cause. It must be remembered that hard permanent

callus is formed only after several months. It is therefore necessary to have protected weight-bearing, preferably by a walking caliper splint. Massage, diathermy, sinusoidal stimulation and medical gymnastics are important in the after treatment and lessen the period of disability.

DISCUSSION

Edmund D. Levisohn, Chicago: I feel that Drs. Kreuscher, Thomas and Levinthal should be commended for the splendid work they are doing, and, above all, for giving to the profession their methods of treatment.

There are a few points I would like to stress.

First. An x-ray film of a fractured bone is of assistance only as to diagnosis and means nothing as to reduction even if the fragments have been forced into position and are being held by the surgeon. Only *after* immobilization apparatus is in place can the skiagram be called one that shows the reduction.

Second. Avoid bulky and unnecessary splinting. A simple impacted fracture of the wrist will heal just as quickly under a few turns of adhesive tape with a wooden tongue depressor over the posterior side of the wrist as it will in a plaster cast and is more efficient, easily applied and convenient for the patient.

A modified Thomas splint with a windlass, properly applied and watched will allow your old man with a fractured hip to be up and about not later than three to four weeks after the injury. Especially is this so in impacted fractures of the hip. Such a splint is a lot more comfortable and satisfactory than plaster of Paris up to the axilla.

Shoulders and arms do wonderfully well in aeroplane splints and allow the patient to be up and around and allow early motion.

Do not be afraid to take x-ray films in order to watch the progress of your case and whenever possible in fracture cases have patient ambulatory.

Watch your splints and ease your patient's trivial complaints. Don't let the nurse or intern adjust them for you. If you find it necessary to remove your immobilization apparatus before union has taken place be sure to take another x-ray film to see if reduction has been disturbed.

Functional results are more important than cosmetic results. Combined they are ideal. But ideals are not always possible to achieve.

And please remember the point the essayists especially stressed. Early motion of all parts

BIBLIOGRAPHY

1. Outline of Treatment of Fractures: Syllabus Adopted at the Conference Held at the Massachusetts General Hospital, Boston, April, 1922. Archives of Surgery, January, 1923, VI, 172-194.

2. Bancroft, F. W.: Clinical Deductions Following a Study of Bone Repair. N. Y. State J. M., 1924, XXIV, 827.

3. Conwell, H. E.: Fractures of the Femur—Treatment and Results Attained by Traction and Suspension. S. G. & O., 1925, XL, 112.

4. Campbell, W. C. & Speed, J. S.: Fractures of the Shaft of the Femur. S. G. & O., Nov. 1924, pp. 642-652.

5. Orr, H. W. and Thomson, J. E. M.: End Results to Illustrate the Value of Fixed Traction in the Treatment of Fractures of the Lower Extremity. Jour. Bone & Joint Surg. Vol. VII, No. 3, pp. 696-708, July, 1925.

6. Cole, W. H.: The Use of the Thomas Bed Knee Splint for the Routine Treatment of Fracture of the Shaft of the Femur. Minnesota Med., 1920, iii, 391.

7. Langworthy, M. A.: New Traction Frame and Caliper for Fractured Femurs, S. G. & O., 1925, XL, 125.

8. Campbell, W. C.: Ununited Fractures, Arch. Surg. May, 1924. viii, 782-790.

9. Delangeniere, H. & Lewin P.: A General Method of Repairing Loss of Bony Substance and of Reconstructing Bones by Osteoperiosteal Grafts Taken from the Tibia. S. G. & O., May, 1920, pp. 441-447.

10. Jones, E. O.: The Treatment of Compound Fracture of the Femur. Northwest Med. 1920, XIX, 143.

11. Orr, H. W. and Thomson, J. E. M.: Maintaining Length and Position in the Treatment of Compound Fractures. J. A. M. A., 1924, LXXXIII, 1399-1401.

12. Beekman, F.: The Treatment of Wounds in Compound Fractures of Long Bones. S. G. & O., 1925, XL, 120.

13. Bizzaro, A. H.: A Comparative Analysis of 213 Forearm and Leg Fractures. Ann. Surg. 1922, LXXV, 221.

14. Saner, F. D.: Fracture Separation of the Lower Humeral Epiphysis, Practitioner, 1922, CIX, 244.

15. Moorhead, J. J.: Operative Treatment of Certain Fractures of Long Bones. Jour. A. M. A., April 28, 1923, pp. 1207-1210.

16. Campbell, W. C.: Fractures of the Humerus. Am. J. of Surgery, June, 1924.

17. Wilson & Cochrane: Fractures and Dislocations.

THE MANAGEMENT OF THE SECOND AND THIRD STAGES OF LABOR*

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It is not the purpose of the essayist in this paper to introduce new methods in the conduct of the second and third stage of labor, nor to modify the present day technique, but rather to emphasize the most salient points that are sometimes regarded too lightly by both the general practitioner and obstetrician. It has been stated by one of America's foremost obstetricians that more fatalities result from accidents occurring during the third stage of labor than in the first and second combined, and when we realize that the statistics of the United States, unreliable as they are in many respects, show a maternal mortality at child birth of seven per thousand cases, I believe that we should strive to remedy this sad state of affairs. This most unfortunate condition is largely due to: 1, the unfamiliarity on the part of the physician with the physiology and mechanism of the second and third stages; 2, the injudicious attempts to hasten the process, and 3, poor asepsis and technique.

Briefly, let us refresh our memory with the

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physiology of the second stage of labor. This stage extends from the complete dilatation of the cervix to the birth of the child. Usually we find that at the onset of this stage, the membranes that have been acting as a hydrostatic wedge have ruptured, and the fetal head is being forced through the thinned out cervix. The patient now shows a marked difference in her cry—it being changed to more of a drawn out grunt, characteristic of the involuntary bearing down pains. With each uterine contraction, the powerful abdominal muscles aid in the expulsion, and the presenting head descends with each contraction until it presents at the outlet. Then with the occiput impinged under the symphysis pubis the process of extension takes place, the head being born in extension with the mento-occipital diameter passing through the vulvar outlet, the bregma, brow and face successively passing over the fourchette. External rotation or restitution quickly follows, indicating that the bi-sacromial diameter of the child has rotated into the anterioposterior diameter of the pelvic inlet. The next few contractions usually fix the anterior shoulder under the symphysis while the posterior shoulder is delivered over the perineum, the anterior quickly following; after which the body of the child is expelled, followed by a gush of amniotic fluid commonly known as the after-coming waters.

The third stage, or placental stage now starts, and may last for a period varying from five to sixty minutes. The uterus is usually relaxed and flabby at first, but within a few minutes begins to contract rhythmically, becoming hard and globular in shape, palpable above the symphysis. Within the next quarter hour the fundus rises high in the abdomen, is eliptical in shape and very hard. This condition indicates that the placenta has loosened from its uterine implantation and has descended into the lower uterine segment and upper portion of the vagina. This phenomenon has been accomplished by the uterine contractions and is independent of the expulsion of the after-birth. At this point of the process one usually notices an advancement of the cord from 3-5 cm. accompanied by a small show of dark blood and very often the consistency of the cord vessels is very limp and empty. Now, with the combined efforts of the uterine contractions with abdominal pressure, the placenta is spontaneously expelled, being in eighty per cent. of the cases inverted like an umbrella, drawing the membrane after it (Schultz method); or it may appear rolled upon itself in the so-called Duncan method. Physiologically the third stage of labor is now complete, the uterus retaining its globular shape, firm consistency and is quiescent.

In discussing the conduction of the second stage of labor, let us first say a few words concerning asepsis. Surgical asepsis, if possible, is most desirable, particularly if one anticipates surgical interference, or any intra-uterine manipulation. The usual preparation of the lower abdomen, thighs and perineum with one per cent. mercurichrome, or half-strength tincture of iodine and alcohol is imperative; following this the vulva and introitus is cleaned with a mild antiseptic solution. The patient, if she has been unable to micturate during the past few hours, should be catheterized. Most obstetricians do not catheterize unless they are preparing for a forceps delivery, and perhaps it is wise to be conservative, but there are many cases, in which the progress of normal labor is retarded, and the pain intensified because of the interference produced by a full bladder. Not only is this true, but post-partum paralysis of the bladder can often be directly traced to the same cause.

The question of making repeated vaginal examinations may briefly be answered by stating that, if the progress is good, and the position of the fetus has been, by abdominal and rectal examinations, diagnosed beforehand as a normal one, the repeated vaginal examination is not necessary and only adds to the possibility of puerperal sepsis. Far more important than the digital examination is the frequent taking of the fetal heart tones. This is paramount in importance if we are going to reduce the fetal mortality, for bear in mind that such calamities as fetal intra-uterine asphyxiation from cord pressure is in 95 per cent. of the cases not recognized until the head is far down in the pelvis, and the cord compressed against the bony pelvis. The head stethoscope is admirable for this purpose, or if the case is delivered in the hospital the interne should be directed to count the heart beats before and after uterine contractions; every

five minutes, at least. The addition of large clocks, or clocks with a clear-ringing bell which records fifteen second intervals to the equipment of the delivery rooms, has aided greatly in this matter.

As a measure of lessening material morbidity, particularly undue traumatism of the perineum let me emphasize the necessity of forcing the advancing head up and away from the perineum, by pressure of the physician's hand covered with dry sterile gauze dressing, exerted on the perineum up against the head. Also let me remind you that the head should be delivered by the obstetrician between uterine contractions, unaided by the patient. If this measure is carried out, fewer unexpected perineal tears resulting from a forceful delivery of the child's head would occur. Likewise, the delivery of both shoulders should be accomplished with as little effort on the part of the patient as is possible.

This, of course, brings up the question of analgesia and anesthesia. There can be no iron-clad rule regarding the use of anesthetics in the delivery room, but we must never forget that anesthesia is by far the greatest adjunct ever given to the profession, and to allay the suffering of the parturient woman is the duty of every obstetrician providing that it is justified. Today, choloroform is being pushed aside because of its injurious effects upon the heart and is being replaced by ether, and the gaseous agents, namely: nitrous oxide and oxygen and ethylene. Ether, for complete relaxation and surgical anesthesia is always a very reliable agent, but for the state of analgesia nitrous oxide or ethylene is far more desirable. The patient may be given inhalations of the gas with each contraction for a long period of time with very little nausea or vomiting and the progress of labor is not hampered. Then at the time of delivery of the head, the state of analgesia may quickly be changed to one of anesthesia and the delivery completely controlled. I do not propose to discuss the merits of nitrous oxide over ethylene except to say that we do not find increased bleeding from the decrease in the coagulbility of the blood when ethylene is used and I find it a very desirable anesthetic to use in all cases.

With the termination of the second stage of labor, it is the practice of many obstetricians to administer by hypodermic, one cc. of a standard extract of the pituitary gland. This aids the uterus in contracting, hastens placental separation, facilitates early expulsion of the secundina, thereby preventing post-partum hemorrhages. It has been customary with me never to massage the fundus of the uterus unless it has a tendency to be flabby and fails to remain contracted after it has been emptied of the fetus. Oftentimes, internes in their anxiety to be of great assistance, will unnecessarily grasp and massage the fundus instead of simply feeling the fundus as they are told. This over-stimulates both the cervical and uterine musculature and does not allow the normal process of placental delivery to proceed. When the separation of the secundina does not continue normally, and the patient continues to hemorrhage, it is always advisable to hasten the emptying of the uterus. The Credé maneuver, if properly executed, is very efficacious, but here again let me state that unless one is familiar with the technique, he is apt to do damage. The Credé expression differs from the simple expression in that, the uterus, at the same time it is forced down into the pelvis, is squeezed from all sides, so that its contents are expelled like the stone from a cherry. Dr. DeLee in his clear and comprehensive manner, describes this maneuver in the following way: "Being sure that the bladder is empty and the uterus contracted the fundus is grasped in the full hand with the thumb in front and, while the fingers are pressed together, the uterus is firmly but gently forced down in the line of the axis of the pelvis." The question may be asked as to the length of time deemed advisable to allow a placenta to remain in the uterus. Twelve hours is perhaps the longest period of time allotted, and then if the Credé manipulation is unsuccessful, manual extraction is advised.

Traction on the cord as an aid in expelling the placenta is of course to be condemned. Naturally no danger is entailed by the procedure if one is positive that the placenta lies in the vaginal canal—but usually the physician that uses such a method is likely to be negligent and careless. The danger from traction would be post-partum hemorrhage from retained portions of adherent placenta and membranes, or from the severed cord, partial or complete uterine inversion and damage to the cervix.

A word may be said regarding the delivery of adherent portions of membrane. Instead of pulling upon the friable portion, a sterile intra-uterine dressing forceps should be used to grasp the membrane firmly and then it is twisted several times about the forceps before downward pressure is made. Usually this is successful and clean results are obtained.

Immediately following the expulsion of the secundina ergot is given to the patient either intra-muscularly by hypodermic or one drachm by mouth, at the same time being sure that the fundus is contracted. Routine examination of the placenta and membranes should follow, being positive that the cotyledons all fit smoothly. The maternal surface should be wiped clean of all adherent clots and a good light will aid the physician in this important step. Remember that retained portions of placenta are a common cause of postpartum hemorrhage, and may be the media for invading organisms causing puerperal infection, and also interfere with uterine involution. Likewise the membranes should be examined for the same reasons.

When a tear of the perineum is inevitable, the question arises of whether the tear should be allowed to occur spontaneously or whether we should try to avoid it by doing an episiotomy. In my past experience I find it much more satisfactory to repair a clean cut episiotomy wound than a ragged tear that extends in two or more directions vaginally. If the physician decides to use the episiotomy he has the choice of a unilateral incision or bi-lateral incisions. The unilateral type usually starts at the mid-line and extends out obliquely, in order to direct the possible tear away from the sphincter-ani muscle, or it may be directed from the mid line of the vaginal orifice directly downward to the anus. I find that the former is by far the safer and is easily enlarged if necessary without possible danger to the sphincter muscle. The bi-lateral type may be used where the presenting part is extremely large, where there is dense scar tissue in the perineum that will not give or where there is a breech presentation. Whether or not there are adequate indications for doing an episiotomy will have to be partially determined by one's judgment and past experience. But the time to perform the episiotomy is before the perineal tissue has become blanched to a pearly color and the skin is showing slight tears of the upper layers. The incision should be made at the height of a contraction, and a heavy pair of sharp scissors, curved or straight, as the choice may be, should be used. Personally I prefer a straight bladed Mayo scissors, and the patient is given three deep inhalations of gas just before the incision is made. On the other hand, the incision should be made before the introduction of the forceps where they are to be used. Briefly we can say that the indications for an episiotomy are as follows: resistant perineum, pathology of the vulva, such as scars or lesions, abnormal size of the child or abnormal mechanism, and as a means of preventing a bad perineal tear. Always remember that the object of the episiotomy is to prevent the separation of the muscle fibres and the fascia layers.

Before repairing the episiotomy, we must first look for tears and injuries to portions of the genital tract higher than the vulvar outlet and, above all, in the cervix. To my mind, the examination of the cervix for lacerations should be a routine procedure in every delivery, and all tears that involve the body of the cervix should be repaired, regardless of whether they are causing hemorrhage or not.

The subject of immediate cervical repair has been discussed for years, but I fail to find any text-book that emphasizes this point sufficiently. Whether we should teach our medical students to repair all cervical tears is a question open for discussion, but we can at least bring to their attention the fact that the cervix is subject to great trauma during the second stage of labor and it should be considered an injured member. All of us can easily recall cases where there was no external hemorrhage, yet examination of the cervix revealed two or three deep radiating tears of the cervical body varying from one to four cm. in length. This condition is apt to occur in primiparous or multiparous labors, and in normal, spontaneous deliveries as well as in forceps extraction or versions. This important step can only be accomplished satisfactorily by the aid of an assistant, two wide flat speculae and, above all, adequate light that is thrown into the vaginal canal. The cervix should be grasped by blunt-end cervical forceps and gently drawn down into the canal. The torn edges are approximated and repaired with twenty-day

chromic gut sutures. One important point to be emphasized in cervical repair is that the deep circular muscle of the cervix must be included in the suture. This circular layer has a tendency to retract under the over-lying edematous mucosa, and unless one draws it out with the aid of tissue forceps, it is apt to be overlooked and the repair to be of no avail, and a deep stellate wound and scar will result. I have had the opportunity during the past five years of examining and treating hundreds of gynecological cases in the clinic, and I know that many cases of chronic endocervicitis, erosions and cervical carcinoma if you please, are directly caused from neglected cervical tears occurring at child birth. Also, many cases of sterility following the delivery of the first child, and repeated miscarriages are due to the lack of proper support of the products of gestation from a badly torn cervix that should have been sutured at the first delivery. The mild leucorrheal discharge and cervical erosions often seen six weeks following the discharge of the patient from the hospital is nearly always due to hyperphasia of columnar epithelial cells lining the canal, and should be cauterized in the office of the physician; usually two to four treatments, aided by tamponades, suffice.

While it is not the intention of the essayist to discuss pathological conditions, yet a few words must necessarily be said regarding hemorrhages occurring in the second and third stages of labor. Always remember that one important duty of the obstetrician is to minimize the loss of maternal blood, and that we no longer agree with the authors of the past who stated that the loss of one to two quarts of blood at delivery was non-consequential. This is not necessary, even when pathology exists, especially when one is aware of the existing conditions and is prepared to cope with the situation. When extreme exhaustion of the patient is present following a long tedious labor, or following the administration of an anesthetic, the process of placental separation is often slow and incomplete, and in many cases the uterus has lost its muscular tone and fails to contract, causing a large accumulation of blood in its cavity. In these cases the Credé maneuver must be used immediately, and if this is not successful, and the placenta is partially retained in the uterus, manual extraction of the placenta should be done at once, and the uterus packed with either plain sterile gauze or iodiform gauze. Then, if after the placenta is removed and the uterus contracted, the bleeding persists, the source must be located and the cervix, with a possible tear into either broad ligament should be thought of.

The repair of the episiotomy is usually the last procedure to be undertaken and time should be given to this matter. Very often we are necessarily hurried by the patient's poor condition, but when there is no great urgency in removing the patient from the delivery table, a thorough repair should be attempted and the patient anesthetized with gas or ether. The field of operation should be cleared of all clotted blood and fresh linen should replace the soiled. It is necessary to have a good light placed behind the operator. Frequently I insert a moderately sized gauze sponge into the vaginal canal to prevent blood from coming into the wound from above. To the sponge should be sewed a twelve-inch tape for the purpose of snapping a hemostat so that it will not be forgotten and left in the vaginal canal. Using plain cat gut and a full curved cutting needle, we begin our repair by bringing together the severed edges of the deeper layers of the perineal body, and we attempt, as best we can, to identify the individual muscles and fascias. The levator ani, tranvers perine muscles and the deep transverse fascia are united respectively and the suture is buried. The superficial fascia and skin are usually united by interrupted silk-worm gut sutures, that are removed after the eighth day past-partum.

In infected cases, particularly where there is acute gonorrheal infection, it is not considered safe to bury cat gut sutures, so here we approximate the edges of the wound by using a few interrupted silk-worm gut sutures, leaving enough space for ample drainage and doing a radical perineorrhaphy at some later date.

To sum up briefly the salient factors that I have tried to bring out in this paper, let us always keep in mind the following:

1. Be aware of the normal mechanism of the second and third stages, and you will more readily recognize the pathological.
2. That surgical asepsis must prevail in the delivery room.
3. Be gentle in all procedures.

4. That a scrutiny of the entire gential tract is necessary if we are to lessen maternal morbidity.

5. Minimize hemorrhage—it may save the patient's life.

6. Remember that the repair of injured parts is just as important as deliverying the baby.

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CONGENITAL PYLORIC STENOSIS*

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Congenital pyloric stenosis is a disease of infancy. The primary mechanical factor of the disease is a thickening of the muscles at the pyloric end of the stomach to such a degree as to cause more or less obstruction to the passage of the gastric contents. The circular layer of muscle is very greatly hypertrophied while the connective tissue is not changed. The serous and mucous coats are not involved. The nature of the causative factor in this disease has not been absolutely determined but interesting theories have been advanced by Scudder[1], Downes[2], Richter[3], Holt[4], Stiles[5], and many others. In observing a series of one thousand babies at Bethesda Hospital, St. Louis, Dr. T. Wistar White found that pyloric stenosis had occurred five times or one in every two hundred cases.

There are two different classes of cases referred to under the name of "congenital pyloric stenosis;" one is a simple spasm with very slight thickening and the other is a true hyperplasia with palpable tumor causing complete or almost complete occlusion.

In a review of the ninety-four cases that I have operated upon, two distinct types were particularly noted. *First,* those having an early onset with an average of seven weeks in which marked tumefaction and true hypertrophy were present. *Second,* those showing symptoms and signs of stenosis with the exception of a palpable tumor. The symptoms in the latter cases were not so marked and the progress of the disease was not so rapid. Seventy-one per cent of my cases were of the former type and twenty-nine per cent were of the latter. As regards sex, the disease appears to be more common in males than in females. Of my cases, twenty-nine percent were females and seventy-one percent were males.

Symptomalogy. The symptoms of this disease are usually so definite it can hardly be mistaken for anything else. The manifestations may be considered under four heads. These are vomiting, constipation, visible peristalic waves, and palpable tumor. The manifestation of the disease to attract attention is vomiting. It may be more or less slight at first but soon becomes decidedly projectile. This is at times so marked that a child lying on its side may eject the contents of the stomach for a distance of several feet. Vomiting does not always occur immediately after taking food but in the later stages of the severe cases a part or all of the food will be ejected at each feeding. Primarily, there is no fever in the uncomplicated cases. Loss of weight is rapid. There is marked constipation and in severe cases this may be practically absolute. Mucus alone may be found in the stools. The urine is scanty and dark in color. The tongue and mouth are dry and the face wrinkled as in a child with marasmus. The upper part of the abdomen will be found on inspection to be somewhat enlarged. The lower part is narrow and empty. The outline of the stomach may project below the umbilicus. The waves of gastric peristalsis soon appear and are pathognomonic. These are due to contraction of the gastric muscle. They show as a rounded eminence arising in the left costochondral border where it remains for a short time and then passes across the abdomen and disappears on the right side. In some cases a number of waves may be seen at one time. They are rarely more than one inch in height and usually occur after food is taken. In a large percentage of these cases a pyloric tumor may be palpated. It occurs as a smooth rounded mass about the size of an olive lying at the site of the pylorus. The symptoms mentioned together with presence of the tumor make the diagnosis positive. A coexisting enteritis tends to obscure the diagnosis. In one of my cases a meningitis from ear abscess was very perplexing. As an aid to diagnosis the use of a stomach tube a couple of hours after taking food is of great value, in some cases recovering all that has been taken.

*Read before Southern Illinois Medical Association at Anna, November, 1927.

Diagnosis. The diagnostic symptoms to be specially emphasized then are *first,* vomiting that eventually becomes projectile so that later in the disease nothing is retained. *Second,* the gastric waves from the cardiac to the pyloric end of the stomach are pathognomonic. *Third,* the presence of tumor. In a few cases where tumor was present I had not been able to palpate it. In some of these cases the stomach is so distended that the thickened pylorus seems to get behind the organ itself. Downes has made a suggestion that before the abdomen is palpated the gas and contents of the stomach should be emptied by the use of a catheter and the abdominal muscles relaxed by allowing the baby to suck water from a bottle during the manipulation. The finding of a tumor is most significant in establishing the diagnosis of a true hyperplastic type.

Treatment. The treatment may be either medical or surgical. Zahorsky states that he believes fifty per cent of these cases, if properly treated from the start, will get well without surgical intervention. White and Tuttle put the percentage of recovery under medical care considerably higher. They estimate that approximately seventy-five per cent, if treated medically from the start, will recover. These cases, however, are subject to sudden relapse and if the progress made is not satisfactory, I believe that surgery should be advised. Holt states that if a patient is observed from the onset of the symptoms, or if a reliable history can be obtained as to the duration of the symptoms, medical treatment is justified for a period of from seven to ten days, provided the baby does not lose more than twenty per cent. of its body weight during this time. If, at the end of this period, the weight has become stationary and there is a general improvement in the other symptoms, this form of treatment may be continued, always bearing in mind, however, that even though the infant seems to be making satisfactory progress there may be a sudden relapse. If so, the case should then be considered surgical, and operation advised. I have known of cases even where children have survived for years with persistent symptoms that led to the child's being defective and immature. As a rule, if a case is watched for a week or ten days and does not show very favorable progress, operative treatment gives the best results. Downes and others placed the mortality of these conditions under medical treatment at from ten to fifty per cent. In tumor cases, Scudder has placed it as high as seventy-five per cent. Surgery, if the child has not lost too much, is usually done with a mortality of less than five per cent.

The question of anesthesia is an important one. I like ether if the child is not too devitalized, and have never seen any ill effects following its use. In cases of extreme prostration, local anesthesia is indicated.

Preliminary to operation, fluids of the body may be supplied by giving four ounces of Ringer's solution. This has an excellent effect. I have also used an ounce of ten per cent. glucose in the superior longitudinal sinus with splendid results. Blood transfusion has its drawbacks. If blood is given this way, absorption of fluids under the skin is much impaired.

Operative treatment: In tumor cases and the refractory cases in which tumor can not be felt, we believe that operation should not be delayed. While many different operations have been devised, there are only two that have been really successful—gastro-enterstomy and the operation of Rammstedt. Gastro-enterostomy is a very severe operation in these young children. I did fourteen of them and only six recovered. The babies who are brought to us early were in fairly good shape and nearly all recovered while other cases referred to me were too late. Many of them were almost moribund. I operated upon one child that weighed only three pounds and fifteen ounces, by posterior gastro-enterostomy. This baby recovered and is well today, and thirteen years of age. In the last eighty cases I have done the Rammstedt operation exclusively, and there was no death in any uncomplicated case. There were five deaths in this series, all from severe pre-operative complications, as uremia, enteritis and other infections.

In 1912, Rammstedt reported the successful application of plastic operation on the pylorus without opening the mucosa. He had done this on two cases. The serous and muscular coats were divided and the submucous coats were undisturbed. The muscle ends gaped sufficiently to correct the tendency to stenosis. Rammstedt, in his first cases, sutured the incision trans-

versely, but the child vomited a good deal and was slow in convalescing. He later found this unnecessary. The Rammstedt operation is done by making an incision about 1½ inches in length through the right rectus and one to two inches below the margin of the ribs. The pylorus is easily exposed where adhesions exist. In these cases a little more difficulty is encountered. The tumor is found to vary in size from the tip of the finger to that of the ball of a man's thumb.

An incision is made through the serosa extending from the lower to the upper margin of the tumor in the non-vascular area. The muscle is partly incised and completely separated by a blunt dissection. It is very important to avoid tearing the mucosa at the duodenal margin, as the connection is so close that this is easily done and has led to fatalities. The circular muscle will be found two to six times the normal thickness. The one frequent fault in our operation is that we do not stretch the pylorus sufficiently and make the incision too short. I have had to reopen two cases on this account. In some cases we are not troubled with bleeding. In others, a number of small vessels bled profusely. Several fatal cases have been reported from this source. I have not had any deaths from hemorrhage but have carefully underrun every bleeding point. The serosa is not sutured and I do not put a tag of omentum over the raw surface, although in one case obstructive symptoms developed on the sixth day which led me to reopen the abdomen. Some peritoneal adhesions were found which were released. This child recovered.

There are just three points regarding the operation which I wish to emphasize: 1. the peritoneal coat and submucous coat are very adherent at the duodenal junction, and the greatest care must be used to avoid tearing into the bowel. Some death have been reported from this cause. 2. Hemorrhage from the margin of the incisions in the pyloric tumor should be carefully controlled, as a number of deaths have been reported from failure to observe this special point. 3. Every case should be taken in suturing the abdominal wall. These children are so poorly nourished and their reparative power is so low that there is a tendency for the wounds to break open. This occurred in several of my early cases. To avoid this I always use fine chromic catgut or kangaroo tendon in the fascia and one or two stay sutures of unabsorbable material. Lately I have put from two to four stay sutures of fine silk in the fascia.

Postoperative treatment: The postoperative treatment is most important and should be carried out by skilled pediatricians. These children are in the same condition as an adult who has been starved nearly to death. The result of giving food in such cases is often disastrous and the result of giving food in large quantities immediately after operation may lead to violent and dangerous reaction. One of our cases died from what seemed to be a myxedema. Zahorsky has made an examination of the stools in a series of our cases and has found, particularly, in the severe types, that violent reaction takes place. The child has some elevation of temperature, usually some diarrhea, and he has found microscopically large quantities of epithelium and pus cells in the feces. This condition often persists for about two weeks.

My conclusions regarding congenital pyloric stenosis are: 1. A large percentage of the mild cases will get well under medical treatment if it is carried out from the start. 2. It is a great mistake to let these patients become too weak before referring them for operation. 3. Mother's milk should be available as food. 4. Nurses trained in the handling of infants will be more successful than those trained in the general hospital, as the surgical results in children's hospitals are much better than those in hospitals devoted to general surgery. 5. In cases that are extremely weak and emaciated, Ringer's solution and glucose should be given before operation. The use of the superior longitudinal sinus for the giving of glucose is comparatively simple.

No surgicel condition will give more brilliant results than those cases which are referred for operation early.

BIBLIOGRAPHY

1. Scudder: Boston Med. and Surg. Jour. Vol. 192, p. 166, 1915.
2. Downes, Wm. A.: Jour. Amer. Med. Asso., Vol. 75, p. 44, July 25, 1920.
3. Richter, H. A.: Jour. Amer. Med. Asso., Vol. 68, p. 352, 1914.
4. Holt: Jour. Amer. Med. Asso., Vol. 68, p. 2014, 1914.
5. Stiles, Sir Harold: Personal communications.

QUINCKE'S EDEMA AND THE PROSTATE GLAND

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The literature on circumscribed transient edema has been ably brought together by R. Cassiere,[1] in his monograph of 1912 and amplified again in 1923 in the chapter on "Die Angioneurosen und Trophoneurosen" in H. Oppenheim's[2] book on Nervous Diseases, 7th edition.

This brief paper makes no attempt to cite the entire literature on this interesting phenomenon, nor does it make an attempt to theorize on what the controlling influence might be, whether the vaso-motor nerves regulate the bulk carriage of chemical materials, augmenting or diminishing the flow of blood to the organs, or what determines the exact quantity of material utilized by every organ. All of these changes are at present a *terra incognita* for one thing, and secondly, this report does not purport to be a thesis on the subject; it is simply a report of an interesting case which suggests an unmistakable association between the removal of the prostate gland and the appearance shortly thereafter of circumscribed edema of the Quincke type.

*Patient J. F., case No. 81805, male, white, 76 years old, came to the outpatient clinic October 3, 1927, complaining of recurring painless swelling in various parts of the body. The swelling, he said, comes on rapidly, without pain, tenderness or redness, lasts a short time and disappears.

The places of predilection are: the loose tissue around the orbits, cheeks, tongue, lips, neck, hands, knees, feet and scrotum.

Previous history: Patient was a merchant up to 20 years ago. Since that time has been selling insurance.

Personal habits: Does not use alcohol in any form, tobacco very moderately. Was never seriously sick, never had malaria or any of the infectious fevers. No unusual events in his life. Emotionally, not easily excitable, not given to worry or fretting and altogether a stable person.

Does not know of any one in his family having had a similar disturbance, and comes from sturdy stock.

Physical examination: Physical examination revealed a well nourished body without undue fat deposit, the skin was soft, moist, without any pigmentation or other unusual manifestations. The cardio-vascular system showed no disturbances of any kind. Blood pressure: Systolic 125; diastolic 74; pulse soft and compressible, 68 per minute, and an absence of adventitious sounds over the chest wall. Lung expansion was good, breath sounds clear, spleen and liver not palpable. No superficial gland enlargement; thyroid gland not palpable. Renal function was good. Urine negative on chemical and miscroscopic examinations. Urea nitrogen 48. No polyuria. No gouty manifestations or complaints.

Blood examination: Erythrocytes 4,200,000, whites 8,000, hemoglobin 85, differential blood count within normal limits. Blood sugar 107 Mg.

Stomach and bowel disturbances absent, is not constipated, and feces showed no unusual findings.

Capillary microscopy: Moderate capillary sclerosis without subcuticular hemorrhages, clumping, nor undue coalescence of the arch capillaries.

Neurological examination: Neurological examination showed no organic involvement. All of the reflexes, superficial, deep, skin and mucous were present and of good tone. The pupils reacted promptly to light and in accommodation. Blood Wassermann and Kahn tests were negative.

There was one sign, however, which indicated some vaso-motor hyper-irritability; namely, the Aschner phenomenon was strongly positive.

The interesting feature in this case is the onset of the swelling. Eight months ago this patient had his prostate gland removed for the relief of urinary retention. The operation was successful and he made an uneventful recovery. Three or four weeks after the operation some parts of his body swelled up suddenly, lasting for a short time, but, as time went on, the swelling appeared more frequently and remained longer, and as stated before it is always free from pain, redness, pitting, fluctuation, tenderness or hardness.

The question of a possible casual connection between the prostate gland and the so-called angio-neurotic edema naturally suggests itself. In Cassiere's survey of the literature no similar case is reported by him, or anyone else, to my knowledge.

Various factors as possible etiology are mentioned, e. g., gout, malaria, intoxication, alcohol, tobacco, diet, chemical poisoning, psychic shock, heredity, nervous exhaustion, trauma, thyroid, menopause and many others, too many to enumerate.

*From the University of Illinois College of Medicine, Division of Neurology. Patient presented before the Chicago Neurological Society, November 17, 1927, at the regular monthly meeting.

1. R. Cassiere: Die Vasomotorisch-trophischen Neurosen, Berlin 1912, Verlag Von S. Karger, Das akute unschriebene Odem, pp. 701-832.

2. H. Oppenheim; Lehrbuch der Nervenkrankheiten, 7th edition Verlag Von S. Karger, Berlin, 1923. Chapter: Die Erkrankungen des Sympathicus; Die Angioneurosen und Trophoneurosen, pp. 2099-2175.

Since this case shows none of the etiological factors enumerated by Cassiere and other observers and since these swellings appeared shortly after the removal of the prostate gland and continue to appear at greater frequency at such an age without ever having had an indication of the trouble before, I deem it interesting to report in the hope that it may throw additional light on this obscure condition.

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RELATION OF THE PHYSICIAN IN INDUSTRY TO THE PRIVATE PRACTITIONER AND TO THE COMMUNITY*

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"The physician in industry is one who applies the principles of modern medicine and surgery to the industrial worker, sick or well, supplementing the remedial agencies of medicine by the sound application of hygiene, sanitation and accident prevention; and who, in addition, has an adequate and co-operative appreciation of the social, economic and administrative problems and responsibilities of industry in its relation to society." That is the definition of an industrial physician as elaborated by the Conference Board of Physicians in Industry. The only difference between a physician in general practice and an industrial physician consists in the latter's appreciation of the problems of industry and the application of the art and science of medicine and surgery to those problems. I think we are all convinced that such a difference exists and the claim of the physician in industry to being a specialist is not based upon his possession of any peculiar *medical* knowledge but chiefly upon his knowledge of non-medical things.

In common with all other physicians, he should possess the following essential qualifications: a good general education; honesty; tact and judgment; a thorough training in the fundamentals of his profession, and a hospital service of not less than two years. Along with these attributes which he should possess in common with all medical men, he should also have had several years of general practice in which he maintained a close connection with public health agencies and studied preventive medicine, and community health problems and activities. He should have a general knowledge of industrial relations including employment methods; labor turnover; job analysis; apprenticeship; pensions; insurance; rest periods; absenteeism and welfare problems. Other essential qualifications are a thorough knowledge of working conditions and their influence upon the health of the worker; of occupational diseases; accident prevention; heating; lighting; ventilation; water supply; locker and washrooms; toilets; rest rooms; restaurants; housing conditions, and community health problems. Thus we find that the industrial physician combines with his medical knowledge and experience certain other attributes peculiar to the sanitary engineer, safety engineer, employment manager and community health officer.

Every large industry is a community in itself and presents the public health problems of a small city. Epidemics must be prevented, sanitation must be maintained and industrial diseases due to specific poisons must be eliminated. Industry is the chief basis for the subsistence of civilized peoples and the character of a community is governed largely by industrial conditions. On the other hand, the success of an industry depends in no small measure upon the health of the community. A sick town means sick workers and sick workers mean a sick industry. The industry cannot be healthy except by curing the sick community.

Industrial health is so nearly identical with community health that it would seem as if industrial hygiene were properly a unit of the community health service, but the fact remains, however, that in very few communities has medical organization developed efficient means of recognizing and promptly treating incipient disease. If such service is desired in industry, industry must provide it.

By thorough physical examinations and the recognition of incipient diseases of the heart and lungs; of contagious and venereal diseases, the medical department of an industry can be of the greatest economic service to a community. The recognition of communicable disease in industry is of vital importance to the community and to the health officer because the prevention

*Read before the Englewood Branch, Dec. 6, 1927.

of these diseases is his job, whether they occur in the home, the school or the factory. The control of these diseases is of paramount interest to the worker because to him it means the loss of income through illness. An industrial worker infected with a contagious disease is a source of danger to his fellow workers because he exposes them to infection; to the industry, because by exposing his fellow workers he may cause an epidemic that may cripple the plant; to the community, because his fellow workers who are exposed to infection by contact with him may carry the disease into their homes whence it may be distributed by other members of their families to the schools and other industries. It is evident, therefore, that the prevention of contagious disease in industry is tied up closely with the prevention of contagious disease in the community in which the industry is situated.

Industrial medical practice should logically be coordinated with the activities of non-industrial physicians, the private practitioners, and with those of community health agencies, all serving with the common purpose of advancing the public health. The industrial physician, because of his opportunities for continued contact with workers, is able to be of great assistance to private practitioners in securing early diagnoses, in the maintenance of treatment, and in the subsequent follow-up observation of patients. With little doubt, much of the existent tendency of the medical profession to view with skepticism or alarm the growth of industrial medicine, will be overcome by a demonstration of the value of co-operation between industrial physicians, private practitioners and other groups engaged in community health work. The relations of the industrial physician with the private practitioner may usually be maintained harmoniously and helpfully when industrial medical practice is conducted with full regard for the reciprocal right which prevails among ethical physicians in non-industrial practice.

Except in certain instances such as isolated mining and lumber camps, the character of the medical service of an industrial medical department should be fraternal and not paternal. Outside of meeting the moral and legal obligations of the company it serves, the medical department should extend a friendly (brotherly) medical service to the employes and dependent members of their families. This should be of an advisory nature only and for the purpose of developing their interest in health measures and means of attaining and maintaining efficiency. Treatment should be given only for minor ailments, which would not ordinarily reach the private practitioner, and to enable the employe to remain on the job. Incipient diseases and those requiring extended attention should be referred to their family doctor or a specialist if required. Thus the industrial medical department should function as a general clearing house to direct employes into the hands of local physicians or specialists. The members of the industrial staff who have an outside practice should never, directly or indirectly, use the prestige of their position to solicit patronage from the employes. It would be unfair to the employe to subject him to the embarrassment of refusing the proffered services and eminently unfair to the private practitioner who had previously rendered conscientious service to the employe and his family.

The industrial physician must observe the ethics of his profession more strictly than almost any other type of professional worker. It should constantly be borne in mind that it is poor policy to try, either openly or by innuendo, to destroy the prestige or minimize the ability of the private practitioner inasmuch as he is a partner of the industrial physician in solving the problems of community health and industrial efficiency. I am convinced that the role of the industrial physician should become more and more that of a friend and consultant of the private practitioner who is trying his best to make the working people well and keep them well.

The private practitioners of a community are always going to play a larger role than the industrial physicians in physical efficiency and health in industry, and there should be no rivalry between the industrial physician and the man in private practice. If such rivalry exists, it is due to the failure of the industrial physician to appreciate that a successful and competent physician in the community is the best possible partner he could have in solving the health problem in his industry.

Absolute frankness and fullest confidence on the part of both the industrial physician and the private practitioner are prerequisite to that comprehensive co-operation for which both should

strive. Co-operation that means better health for the employe and his family; better working conditions; better living conditions and greater efficiency on the job.

The private practitioner must remember that the industrial physician has a specific responsibility toward both employes and employer, and he should be willing to co-operate with the industrial physician in putting his job over. He should also be willing to give the industrial physician credit for trying to raise the standard of quality of his work and for wanting the confidence of the employes. He must be willing to appreciate that the industrial physician's stock in trade is not materially different, medically, from that of the private practitioner; that when the industrial physician fails to hold a patient, it hurts him just as much, if he has a conscience, as it would the private practitioner. The industrial physician, therefore, naturally resents any acts or comments on the part of the private practitioner which tend to lessen the employe's confidence in industrial medical work and, what is of the utmost importance, the private practitioner must have sufficient confidence in the industrial physician to meet him half-way to discuss the difficulties which lead to misunderstandings and wide breaches of friendship for the industrial man.

An industrial medical service is usually strengthened by close working relations with community resources. The relations of the company physician and the local practitioners may be, and should be, adjusted in conformity with the Golden Rule.

PRELIMINARY PREPARATION OF A PATIENT FOR COLOSTOMY

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With a careful study of the apparently insignificant details before, during and after surgical procedure the operative mortality will be much reduced.

Very often the patient received for colostomy is *in extremis* and no elaborate preparation is possible. If the obstruction is complete it is especially desirable to wash out the patient's stomach before he goes to the operating room.

If, however, the obstruction is but partial the patient receives the usual preparation for a laparotomy. If any pre-existing ailments are present, such as bronchitis, tonsillitis, anemia, etc., the patient should be first relieved of his trouble before the operation is considered.

The colon is carefully flushed with saturated boric acid solution three times per day for two days previous to the day of the operation. The day before the operation he is urged to drink water freely, taking at least two quarts on this day.

The night before the operation he is given a full dose of hypnotic to insure a good night's repose. From now on nothing more is given him by mouth and he is not disturbed during the night. Too often, the special directions left by the surgeon do not include orders to see that the patient receives the necessary medication to produce a satisfactory number of hours of sleep the night before operation. With this detail forgotten the patient is altogether too likely to have a worried, restless, even sleepless night, with the result that he or she arrives at the operating room in a needlessly exaggerated state of nerves.

On the morning, one and a half hours before the time set for the operation he is asked to void his urine and the nurse must measure this excretion to be reasonably sure that the bladder is empty. If he fails to satisfactorily void, that fact must be noted that he may be catheterized in the preparation room. After he has voided and returned to his bed he is given hypodermically, morphin sulphate gr. ¼ with scopolomine gr. 1/150; and this is repeated in 45 minutes.

Before going to the operating room a pneumonia jacket should be placed on the patient, especially if the weather is cold, and changed immediately after the operation before the patient is removed from the operating room. More attention should be paid to keeping the patient warm immediately after an operation by such simple means as having all windows closed and a few hot water bottles in the bed and the heat turned on. Electric fans during an operation, I believe, are dangerous to the patient.

Upon his reception in the preparation room the entire abdomen and the pubes are shaved and washed thoroughly with soap and water. He is also catheterized if that be necessary. It

is very embarrassing and time consuming to stop the operation after the abdomen is opened to catheterize the patient. After he is anesthetized the abdomen is painted with tincture of iodine, giving especial attention to the recesses of the navel. The iodine is immediately wiped off with alcohol and the abdomen is wiped dry. In emergency cases such detailed preparation may be impossible and the patient will be shaved, scrubbed and the skin sterilized as he lies supine upon the operating table. His body should be kept warm by ample clothing over other than the field of operation and free from wetting. Many patients, especially foreigners, are accustomed to sleeping in heavy underwear. This is usually removed and the patient is supplied with an abbreviated jacket which reaches to about the level of the umbilicus. In many cases he has been accustomed to sleeping with one or more featherbeds for cover, but now he gets one or two blankets, which are usually removed when the anesthetic is started. Years ago surgeons operated on heated tables, the idea being to prevent shock in that manner. Today it is not uncommon for surgeons to operate on a patient covered only by a gown, stockings and laparotomy sheets, with a window open and an electric fan playing upon the patient. By having all patients wear flannel jackets and keeping the part of the body not involved in the operative field covered by blankets, we can do much to prevent shock.

The operating room should be kept at not lower than 70 degrees F. Provision should be on hand for artificially warming the patient, and an ample supply of towels wrung out of hot normal saline solution should be on hand for protecting coils of evicerated intestines. Reasonable expedition should be observed throughout the operation, because delays contribute much to the mortality of these patients. Many postoperative ether pneumonias would have been avoided had the surgeon spent a week or two prior to operation in getting the patient into the best possible condition. Of course, if the indications are urgent, an anesthetic should be employed which will give the minimum amount of irritation to the bronchial condition. Nitrous oxide or ethylene in this instance is ideal if given by an expert, but very dangerous if given by a novice.

As soon as the patient is unconscious of what is going on he is placed in the Trendelenburg position and supported at the shoulders by well padded shoulder pieces. The legs below the knees are raised to a horizontal level. In this position the rectus muscles are more relaxed than when the legs are flexed at the knees and the patient maintained in position by fastening the legs to the table. This position rids the pelvis of all or nearly all of the small intestine before the abdomen is opened, and if it is maintained during the entire operation it will rarely be necessary to use pads or packs to keep the intestines out of the field.

SOME OBSERVATIONS ON LEGG'S DISEASE*

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Children are frequently brought to the physician's office complaining of limp, often referred to the hip. It is seldom that the patient is otherwise ill, but the limp is puzzling and the parents want to know why. Legg's disease is one of the many conditions which may cause this symptom. It has been variously described, both according to the presumed pathology and by eponym. No entirely satisfactory designation has been accepted and I prefer to speak of it here by the term which seems most familiar. Legg usually refers to it as "flat head" or the Latin equivalent—coxa plana. Other synonyms as Perthe's disease, Calve's disease, osteochondritis, osteochondritis deformans juvenilis coxae are also in use.

During a period of residence at the Children's Hospital in Boston an opportunity was afforded me in Legg's Clinic to observe a singularly large group of cases under treatment for this ailment. Many of these were old cases which failed to show any abnormality clinically, though the x-ray disclosed changes in the hip joint. During a period of a year there were, as I recall, from fifteen to twenty new cases admitted.

Several theories have been adduced to explain the etiology of coxa plana, viz: 1. Infectious. 2. Congenital. 3. Traumatic. 4. Combinations of these.

Phemister, Freiberg and Kidner have reported

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cases to show that the lesion was of infectious origin. A case report by McWhorter maintained the same contention. It seems very doubtful, however, that the latter case was one of Legg's disease. In some of the others a growth of

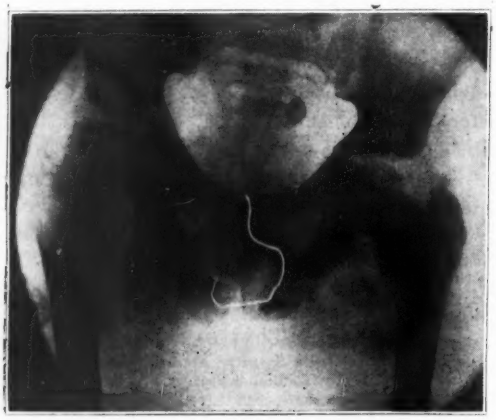

Fig. 1. Cap type (Legg) following traumatic dislocation of the hip.

staphylococcus was offered as presumptive evidence of infection, although this may always be a contamination.

In one patient, operated upon by Legg, an area below the epiphysis of the femur, and resembling a Brodie's abscess, gave positive evidence of infection. It is, however, not only possible but probable that the abscess had no relation to the hip condition except in a remote manner.

Calve originally contended that the disease was due to an earlier rickets which deformed the osseous structures. Berry suggests that an arrested embryonic development has rendered the epiphysis more susceptible to trauma. Legg states that 66% of his cases have given a true history of trauma, and he believes that it is the chief factor in the production of flat head.

Certainly it seems there is little evidence to show that the disease is of infectious origin. Actually, it is rare that an operation is indicated and, hence, material for study is scarce. Furthermore, there is little clinical data to bear out the presence of infection.

There is, however, much evidence to substantiate the theory that trauma is an important factor. Twenty-two of Legg's original cases were reduced congenital dislocations of the hip, and I believe that no one doubts that trauma is caused when a congenital dislocation is reduced by the closed method. Several cases are cited below in which trauma seemed to be an essential finding.

Undoubtedly there is some other factor necessary to produce the condition. Certain patients show other disturbances in the epiphyseal development and present lesions which are present at the same time in the same patient. Many authors agree as to the relationship existing between Kohler's disease of the tarsal scaphoid, Freiberg's infraction of the metatarsal head, Osgood-Schlatter's disease, vertebral epiphysitis described by Buchman, and Scheuermann, fragmentation of the epiphysis of the humeral epicondyle and of the lesser trochanter.

It is probable that trauma instigates the trouble, but it seems probable also that it is an injury to an already defective epiphysis. The defect may be generalized and affecting all epiphyses of the body. Possibly a disorder of the calcium and phosphorus metabolism might be responsible for a poor grade of epiphyseal tissue.

Legg assumes the pathology to result from interference with the epiphyseal circulation, which causes atrophic changes in the epiphyseal cap of the head of the femur and concentrates the local blood supply in the neck. On operation,

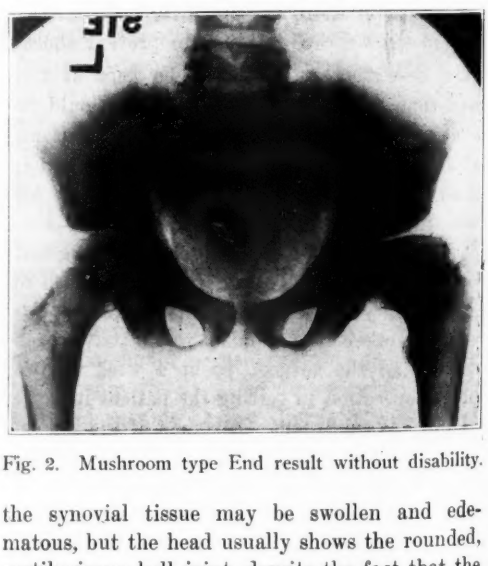

Fig. 2. Mushroom type End result without disability.

the synovial tissue may be swollen and edematous, but the head usually shows the rounded, cartilaginous ball joint, despite the fact that the x-ray shows a thin, flat epiphyseal cap.

Symptoms and Signs. A child, most often of

5 to 8 years, is brought in because of limp. Pain seems to be a variable quantity and not infrequently is absent. The history of trauma is generally given, since in any event the laity are most apt to trace a disability of this type to an injury, real or imaginary.

Text-books assert that the diagnosis rests on confirmatory x-ray evidence, and, as a matter of final analysis, it probably does, though the disability may be present for three months before there is positive x-ray evidence. There are, however, certain worth-while signs which the clinician may look for. In the absence of marked muscle spasm about the affected hip, rotation, particularly internal rotation, is definitely limited—likewise abduction; other motions may be normal. Palpation about the joint frequently discloses a thickening about the great trochanter.

The x-ray will show the flat, cap-like, sometimes fragmented epiphysis, a thickened neck of the femur, small scattered areas of rarefaction in the neck, occasionally above the acetabulum. The epiphysis becomes more dense and tends to slide to the outside, or, as the French authors express it, the epiphyseal line becomes more horizontal.

The cases presented here are offered to support the conclusion that the inciting factor in coxa plana is trauma.

1. O'C. Age 8 yrs. This child fell off the roof of a low building and dislocated his right hip. A plate taken eight days later shows the hip after reduction. This case was discharged by the attending surgeon, but returned after one year because of limp and a certain disability in the right hip. An x-ray taken at this time showed a well defined flat-head, of the type referred to by Legg as an end result of the cap type. He describes two—one, a deformed head and neck—the cap type (Fig. 1.), and, second, a deformed head and neck—mushroom type.

2. J. H. This case originally entered the hospital for the reduction of a congenital dislocation of the left hip. Several attempts were made to reduce this hip by the closed method before the operation was successful. An x-ray taken at 5 years shows the hip reduced. A very good acetabular shelf has been formed, and the femoral epiphysis has the characteristic flat fragmented appearance.

3. T. McC. This plate is presented to show the end result of a boy now in his teens, who has been under care for many years. There is no disability present. (Fig. 2.) It is in this type of end result that the best function is realized, and, according to Legg's recent report, none of the cases has shown a shortening of more than one-half inch.

I wish to mention here the case of a boy of 10 years who entered the hospital because of a coxa plana, who not only showed the characteristic x-ray picture, but also complained of tenderness in the elbow and in the heel. X-rays of these structures disclosed a fragmentation in the internal epicondyle of the humerus and a definite apophysitis of the os calcis. Another similar case was seen in which the flat head was accompanied by a Kohler's disease of the tarsal scaphoid in the same leg. These cases I believe bear out my assumption that the epiphyseal tissue in coxa plana and other parallel conditions is probably defective throughout the body.

Prognosis. This is generally good, with a disability which lasts for varying lengths of time up to a year and occasionally longer.

The end result in all cases leaves a deformity visible by x-ray, either forming a so-called cap-like or the mushroom type of epiphyseal head. Legg states that an end result of the cap type is the most severe of the two, with perhaps one-half to one inch shortening and occasionally a slight limp. Though in most cases the final disability is either slight or non-existent, one is prone to wonder if in later years this is not the type of hip joint which suffers from osteo-arthritis—i. e., the "old man's hip" and other allied conditions.

Treatment. This also varies in the hands of different men. It has been Legg's practice to immobilize and prohibit weight bearing in only the more severe and painful types or in the ordinary case which shows exacerbations of symptoms from time to time. As a general rule he wraps a figure-of-eight flannel bandage about the disabled joint, both for its therapeutic and disciplinary value.

Many surgeons prefer to use the plaster cast, which, however, is ponderous and unnecessary. It removes the limb from sunlight and air and leaves behind a considerable atrophy of bone and soft tissue. Should it be necessary, weight bearing can easily be controlled by the use of a Thomas walking splint, with an elevated shoe on the opposite leg.

BIBLIOGRAPHY

Legg: Boston Med. & Surg. J., July 17, 1910.
Legg: Jour. Bone & Joint Surg., Jan., 1927.
Perthe: Duetsch. Zeitscher. f. Chir., 1910, CVII.
Phemister: Arch. Surg., Mar. 1921, 221.
Kidner: Amer. Jour. Orth, Surg., June, 1916.
Freiberg: J. A. M. A., Aug. 26, 1916.
Berry: Jour. Bone & Joint Surg., Apr., 1926, P. 333.
McWhorter: Surg. Gyn. Obst., 1924, P. 632.

THE MANAGEMENT OF ECLAMTOGENIC TOXEMIA*

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The medical management of any disease or morbid condition depends upon accurate information concerning its etiology and pathology. The cause of eclampsia is unknown according to most authorities and, therefore, all treatment must be more or less empirical and based on observations clinical and laboratory that have been made by various men. Recent advances in blood chemical analysis have failed to be of as much practical importance in the solution of the problems of the toxemias of pregnancy as was hoped and predicted for them a few years ago. Detailed chemical analysis of the urine with a study of the nitrogen partition, and the other constituents, have not advanced our knowledge very materially.

We have, therefore, to rely largely on our clinical observations plus what aid we may obtain from the laboratory in the management of a given case of eclamptogenic or nephritic toxemia.

Let us, therefore, summarize what we know regarding the disease and see if from these facts we can build up a rational management of the morbid condition based on this knowledge, disregarding the exact scientific proof of the underlying pathological processes.

First, we know that eclampsia never occurs in males or in non-pregnant (except puerperal) females.

Secondly, it is rarely if ever seen before the fifth month of pregancy. Cases have been reported in the early months of pregancy and even in hydatid mole pregnancy, but I have never known anyone who has seen such a case, and for one I am very skeptical as to their existence.

Thirdly, it is associated with extensive degeneration of the highly specialized cells of the parenchymatous organs, chiefly the liver, kidney, brain, heart and retina.

Fourthly, these lesions are associated with, if not dependent upon a thrombosis of the smaller vessels of these organs, and are not constant in any of them.

Fifthy, the blood examination reveals increased coagulability, retention of non-protein nitrogen, uric acid, urea and chlorides and a decreased CO_2 combining power, and a slight leukocytosis may occur. The blood pressure systolic and diastolic usually is raised.

Sixthly, other symptoms and signs manifest themselves, such as edema of greater or less degree, headache, epigastric pain, dimness of vision, vomiting and, as a climax, convulsions. Jaundice may be present, although this is rare. All of these symptoms may be aggravated by increased physical activity, or the ingestion of large amounts of protein rich foods.

We have attempted to interpret these observations, all of which we have repeatedly confirmed, and to outline a management based on this interpretation. Our conception based on the observations above mentioned is that eclampsia is a toxemia occurring in pregnant and parturient women at or near term. That the toxemia is primarily due to the pregnancy and may be aggravated or modified by the diet, amount of physical exertion the patient indulges in, the excretory capacity of the emunctories, and the effects produced by the toxin on the parenchymatous organs of the body. The alterations in the blood coagulability may be secondary to the toxemia or to the changes wrought in the parenchymatous organs, especially the liver. We are inclined to believe that there is essentially no difference between patients having convulsions and those not having convulsions, except one of degree of the intoxication, and possibly a selective action on the part of the toxins producing thrombi and edema in the motor cortex of the brain.

For the purpose of simplicity we may turn to a digram which I use in presenting the subject to students, to give them something to visualize in considering the facts in this disease. If we conceive of the blood as a reservoir which has three inlet pipes and three outlet pipes with the toxins contained therein at a certain level maintained by the proper ratio between intake and outgo, we will have a working hypothesis to help us explain what the fundamental factors to be considered in patients showing evidence of eclamptogenic toxemia are. Let one inlet pipe A represent the toxins poured into the blood stream from the exogenous protein metabolism. Let B represent the toxins arising from the endogenous waste products due to bodily activity.

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Let C represent the toxins resulting from the waste products of fetal protein metabolism which are thrown into the blood stream of the mother by the placenta or abnormal toxic split products arising in the placenta itself.

The outlet pipes will be represented by A′ the kidneys, B′ the bowels and C′ venesection. As long as the outlet or excretion efficiency is equal to or greater than the amount of toxin poured into the blood stream the normal toxin level will be maintained, and the patient will be classified as a normal pregnancy. But if the reverse is true, the toxins begin to accumulate in the blood stream, when a toxemia of pregnancy results.

It will be seen that the disturbance of balance may arise from one of several factors such as indiscretion in diet, overwork, a mild nephritis, absorption of toxins from the intestine, or an excessively toxic fetus or abnormal placenta.

With these factors in mind, then, let us see how we shall treat a patient showing signs of eclamptogenic toxemia. Two factors are practically completely under our control. The exogenous protein metabolism can be cut down to the vanishing point by putting the patient on a milk diet. The endogenous metabolism can be likewise reduced by placing her at absolute bed rest. The bowels can be opened up and made to eliminate toxins from the blood by the use of saline cathartics. This leaves two factors undetermined, the kidneys, concerning whose functional capacity or damage much can be learned by thorough chemical urine and blood examination, and the fetus, concerning whose toxin production little can be determined, except by inference.

It has been found clinically that the kidney may be protected by reducing its work by reducing to the minimum the load of protein end products that it has to excrete. That in many instances the evidences of irritation as albumin, casts and red cells, disappear from the urine and the functional capacity as shown by various kidney-function tests will be greatly increased. This is, obviously, of the greatest importance because progressive kidney damage usually determines the spontaneous or artificial termination of pregnancy, and may result in a fatal issue even after pregnancy has been terminated. The most important consideration in this connection is the excretion of the toxins by the kidneys themselves. Failure of the kidney to perform this function results in their retention in the blood stream, with destructive action on the highly specialized cells of the liver, brain, and heart muscle. It is also probable that this primary toxic action is augmented by the absorption of toxins from degenerated areas occurring in these organs, particularly the liver, whose physiological detoxicating function may also be seriously impaired and thus add to the toxemia.

The most difficult factor to evaluate and to control in this connection is the fetus and its placenta. It is obvious that under normal circumstances the waste products from the fetus which are highly toxic are excreted into the maternal blood by the placenta. Under normal circumstances they are excreted by the patient's kidney without giving evidence of producing toxemia. We have no method of measuring the amount of toxin thus produced and excreted. There is no means of comparison between the toxins produced by the fetuses in the bodies of various women or of comparing the toxins excreted by the same fetus at different stages of pregnancy. We may assume that this toxic excretion gradually increases as term approaches. Young has felt that degeneration of the placenta secondary to thrombosis and infarct formation may play an important role. It is quite improbable that all placentas excrete the toxic fetal metabolic end products into the maternal blood in the same form and at the same rate, and therefore the reaction produced by this excretion must necessarily vary.

The management of patients suffering from toxemia must rationally be considered in relation to the degree of toxemia, and the severity and rapidity of appearance and progression of the symptoms, the associated normal or abnormal obstetrical and medical conditions and the time in pregnancy or labor at which the diagnosis is made. We may divide the cases into six main groups:

1. Normal obstetrical conditions plus mild toxemia.

2. Normal obstetrical conditions plus rapidly advancing toxemia.

3. Normal obstetrical conditions plus fulminating toxemia.

4. Abnormal obstetrical conditions plus eclamptogenic toxemia.

5. Intra-partum eclampsia.

6. Post-partum eclampsia.

Before going into the management of any of these special divisions we wish to stress the great importance of prenatal care as a prophylactic management. We believe that every obstetrical case should be under the personal supervision of a physician from the early months of pregnancy. Urinalysis should be done at least once a month up to the seventh month and every two weeks thereafter. This examination should include the amount passed in twenty-four hours, the specific gravity, the quantitative amount of albumin, if present, the microscopic examination for the possible finding of bacteria, casts, red blood corpuscles and pus cells. Blood pressure, systolic and diastolic readings should be taken and recorded at each visit. We consider any patient with a systolic reading over one hundred forty to be abnormal, if her pressure in the early months or when she is not pregnant is lower than this figure. Eclamptogenic toxemia occurs with low blood pressure, so that the absence of this symptom may be disregarded if the patient shows other symptoms of severe toxic nature.

The patient's weight should be carefully watched, and any rise in excess of twenty-five pounds or any sudden increase in weight should be regarded with suspicion. The appearance of edema, especially if more or less generalized, is very suggestive. Headache, spots before the eyes, epigastric pain, and vomiting are all extremely important signs and symptoms of eclamptogenic toxemia. These may, however, be due to other causes, and it is only after a careful examination into the possible causes of these symptoms that their eclamptogenic origin can be definitely asserted. The blood chemistry findings are usually very slight and equivocal in the early pre-eclamptic state. Careful observation and intelligent interpretation of these signs and symptoms, together with strict observance of the rules for management of these conditions, will result, we feel sure, in eliminating entirely the dangerous convulsive stage of the disease.

The management of the various groups listed above will be considered separately.

Group 1. Patients with Normal Obstetrical Findings and Mild Pre-eclamptic Toxemia

The clinical picture in such cases may be as follows:

The patient has mild edema, slight headache, a gain of ten pounds in a few weeks or a month. The blood pressure is found to be one hundred fifty or more. The urine shows an occasional cast and a one plus albumin is somewhat concentrated and decreased in amount in twenty-four hours. Such a patient is put to bed on a milk diet and the bowels are opened freely by daily saline cathartic. The symptoms practically always subside in a few days. Following this, if she be at or near term, we frequently try to induce labor by quinine and castor oil; if unsuccessful we increase the diet, and if no untoward symptoms arise we let her get up and even do light work under strict diet and blood pressure observations every day or two. If she does not respond to this management she is treated the same as group 2.

Group 2. Normal Obstetrical Conditions but Rapidly Advancing Toxemia

In this group the toxic symptoms are more marked and advance in severity, even under proper prophylactic management. There is, however, a period between the onset of the symptoms and the convulsive seizures of several days or weeks, but the pre-eclamptic symptoms become progressively more severe in spite of management. Under these circumstances we give quinine and castor oil, either with or without pituitrin, to induce labor, no matter what the gestation period. Failing, we pack the cervix with gauze or insert a Voorhees bag to induce labor. We try to estimate the reserve left in these cases before the onset of convulsions, and to terminate pregnancy before this is exhausted. This is not always easy to do, and we use as criteria of impending convulsions, especially, the symptoms referable to the brain, such as intense headache, blurring of vision, amblyopia, spots before the eyes, epigastric pain, nausea and vomiting. When these signs are well marked, we feel the convulsions are imminent, and the more radical measures have to be undertaken. During labor we stand ready to assist with the delivery of the child if complications intervene such as cardiac failure, pulmonary edema, premature detachment

of the placenta or threatened fetal asphyxia. We sometimes shorten the second stage by a mid or low forceps under nitrous oxide anesthesia. Following delivery, treatment is contined for seventy-two hours at least, exactly as if we expected that each of these cases would develop convulsions. We order rest, milk diet, free saline catharsis and fluids are forced. Morphin, one-fourth grain hypo, is given as soon as the baby is born and repeated every six hours if the patient is restless and the symptoms persist or are aggravated.

Group 3. Normal Obstetrical Conditions and Fulminating Toxemia

This group of patients are in the greatest danger because the onset of dangerous toxic systems frequently takes both the patient and the doctor by surprise, and before the diagnosis is made convulsions may be present. Indeed, we occasionally see patients who have been under careful observation and have had efficient prenatal care in whom convulsive seizures are the first sign of intoxication. In this group we terminate the pregnancy as rapidly as possible, and the means employed depend on the obstretrical and surgical skill of the attendant, the surroundings of the patient, the duration of pregnancy, whether or not labor has begun, and whether the patient is a primipara or multipara. Under ideal circumstances with the patient in a well regulated hospital and the services of a skilled obstetrical surgeon at hand, I believe, a cesarean section under ethylene or local anesthesia, especially if convulsions have not yet begun, to be the safest method of delivery for both mother and child. This is especially true if the woman is a primipara at or near term and labor has not started. In the presence of active convulsions I prefer ethylene anesthesia. In multipara with premature but viable babies, a vaginal cesarean section is elected. However, if labor has already set in and the cervix is partially dilated, the dilatation may be completed under gas and the fetus delivered by version and extraction. Following delivery a quarter grain dose of morphin is given and repeated in three hours if necessary. The patient is bled if necessary to make a total blood loss of 1,000 c.c., including the operative blood loss. With the patient under the care of the same man, without the proper facilities or under proper surroundings but with an unskilled surgeon, better results will always be obtained by medical management of these cases, and here the Stroganoff method is probably the best to employ. The technique is as follows:

When first seen, morphia ¼ grain, and after one hour, chloral hydrate 30 grains in 200-250 c.cm. of saline solution by rectum, or in 100 c.cm. of milk by mouth. After 3 hours, morphia ¼ grain, and after 7 hours chloral hydrate grains 30. After 13 hours, chloral hydrate grains 20 and after 21 hours, chloral hydrate grains 20, repeating every eight hours.

Ether is administered to control the convulsions, cardiac stumulants are employed, delivery is not effected until after the cervix has become fully dilated, and if more than three convulsions occur, 400 c.c. of blood is withdrawn. Stroganoff has collected 2,208 cases treated by this method in various clinics with a mortality of 9.8 per cent., and reports that in 230 patients whom he treated personally it was only 1.7 per cent. To this treatment we may add the use of magnesia sulphate intravenously in 20 c.c. doses of ten per cent. solution, as recommended by Vruwink and his associates.

Group 4. Abnormal Obstetrical Conditions Plus Eclamptogenic Toxemia

This group includes women with contracted pelvis, cardiac or pulmonary complications, uterine fibroids, acute infectious diseases, and pelvic tumors. In general it may be said that each case must be considered on its own merits but that, except in the case of acute infectious diseases, the earliest termination of pregnancy compatible with fetal safety and by the most conservative method, is the procedure of choice. In the acute infectious cases we feel that the danger of puerperal sepsis developing is usually greater than the danger of eclampsia if the case belongs to the first or second group mentioned above. If of the third group, immediate delivery is indicated regardless, and under these circumstances a Poro-cesarean should be done. We lean decidedly toward enlarging the indication for cesarean section in this group because we hesitate to send a woman into a long, slow labor with impending eclampsia and abnormal heart or lungs or some other serious complication of pregnancy. The indication in these cases may be a double or triple one.

Group 5. Intra-partum Eclampsia.

Elamptic convulsions coming on during labor frequently give rise to undue excitement. Once labor has started and some dilatation has occurred the onset of eclamptic convulsions usually results in speedy termination of the labor if there is no great disproportion between the maternal and fetal diameters. We usually wait until the completion of the first stage and then deliver by version and extraction if labor is delayed thereafter. Venesection of 600 to 800 c.c. in well developed women also is of value. These patients are set up late for delivery because of the inevitable contamination of the field during convulsions. Precipitate delivery must be guarded against by careful rectal examinations which should be limited in number to avoid irritation which precipitates the convulsions. All preparations must be made for reviving an asphyxiated baby, such as tracheal catheter, hot and cold water bath, oxygen and warm blankets, together with facilities for incubation if necessary. It should be kept in mind in this connection that these babies are toxic and frequently narcotized at birth, and the efforts at resuscitation must be governed accordingly. Vaginal examinations and operative intervention should be reduced to a minimum because of the known predisposition of the women to puerperal infection. All tears or operative wounds must be repaired at once if the patient's condition will permit.

Group 6. Post-partum Eclampsia.

This condition may arise immediately after labor or not until two or three days later. We very much doubt the authenticity of cases reported which are said to have come on weeks after confinement. As has been said before, every patient showing serious pre-eclamptic toxemia is treated in the puerperium as if we expected her to actually develop convulsions. This treatment is continued until the systolic pressure returns to one hundred forty or less, and the other signs and symptoms have improved. There is a peculiar psychological reaction on the part of the attendant in a severe eclamptogenic toxemia. With the birth of the baby, it is most natural to feel that the danger period is over because the pregnancy is terminated. This in a measure is true, but it must be remembered that fatal eclampsia can and does come on in the puerperium, and vigilance may not be relaxed until complete metabolic balance has been restored.

These cases are treated by morphin, hypodermatically, and chloral and bromides per rectum. They are kept warm and on a milk diet. Magnesium sulphate two ounces by mouth or intravenously 10 c.c. of a 10 per cent. solution is used. Fluids are forced; in severe cases 1,000 c.c. of blood are removed by venesection.

TREATMENT OF ECLAMPTIC CONVULSIONS

The management of the convulsions in any of these groups demands constant attention of a trained attendant. A mouth gage should be placed between the teeth at the beginning of the tonic seizure to protect the tongue during the clonic part of the convulsion. Sufficient assistance to prevent the patient from throwing herself off the bed during the convulsion must be provided. I know of at least one death from skull fracture where this was not provided for. The patient is best kept in a darkened room, and all outside stimuli reduced to a minimum. For this reason examinations should be few and very gently carried out. Morphin by hypo and chloral hydrate and bromides per rectum as above mentioned are useful. Bleeding when indicated had best be done by venesection rather than to atempt withdrawal of blood through a needle. The increased coagulability of the blood almost always clogs the needle before the desired amount is obtained.

Results. The only justification of a given line of treatment applied to a morbid condition is the result obtained. The theory may be all wrong, but if its application results in successful management of the disease, at least one important goal has been reached. We have had two series of patients coming under our observation in the last seven years. One group at the University of Iowa was composed chiefly of younger women, many of whom came to the clinic and remained under observation after the twenty-eighth week of pregnancy. They were housed in a waiting home attached to the clinic and were available at all times for observation. They were one hundred twelve in number, of which eight were classified as eclamptogenic and eighteen were nephritic toxemias. Our second group have been collected at the University of

Illinois, Research Hospital, and compromise the usual run of dispensary cases in a charity hospital. These numbered eighty-eight eclamptogeni and fourteen nephritic, a total of one hundred two cases.

We have, therefore, a total of two hundred fourteen women who passed through the two clinics with pre-eclamptic or nephritic toxemia. Of these, nineteen developed convulsions, one hundred sixty-eight were classified as pre-eclamptics, without convulsions, leaving thirty-two classified as nephritic toxemia.

Because of the difficulty of differentiating between the eclamptogenic and nephritic toxemias and because their management in the later months of pregnancy is practically the same, we have included all cases of these types in this series.

We have studied these cases from the standpoint of age, race, parity, period of gestation, Wassermann, history of preceding nephritis, eclamptogenic symptoms, such as headache, edema, visual disturbances, epigastric pain, vomiting, time of onset of convulsion, blood pressure, urine-analysis, eye grounds, phenolsulphonephthalein test; whether or not labor was induced, mode of delivery, weight of baby, blood loss, therapeutic measures employed, as venesection, milk diet, induction of labor, bed rest, magnesium sulphate and morphin injections, and the end results for the mother and baby.

I will not burden you with a presentation of the figures thus collected, but give a summary of the results obtained from this study:

Convulsions developed ante-partum 8%.

Convulsions developed intra-partum 6%.

Convulsions developed post-partum 5%.

Systolic blood pressure average: eclamptogenic cases 163; nephritic 190.

Average percentage excretion phenolsulphonephthalein, eclamptics 16%; nephritics 23%.

Operative delivery in eclamptogenic cases 21%; nephritic cases 52%.

Cesarean Section 6%.

Forceps 6½%.

Version and extraction 5%.

Craniotomy 1.5%.

Bag induction of labor 24%.

Quinine and castor oil induction of labor 14%.

The fetal mortality in the eclamptic cases was 7½%.

The total fetal mortality in both groups was 16%.

Fetal mortality in nephritics was 50%, in viable babies 21%.

Fetal mortality in eclamptogenics was 12%, in viable babies 6%.

There was no maternal mortality.

CONCLUSIONS

1. Eclamptogenic toxemias are probably due to altered metabolism in the mother due to the pregnant state and directly dependent upon the ratio between toxin formation and toxin excretion.

2. The probable sources of the toxins are the end products of protein metabolism, maternal and fetal.

3. Careful prenatal supervision of the pregnant woman will eliminate the possibility of convulsions occurring in a large majority of cases.

4. Except in the fulminating cases conservative treatment is the method of choice, and in these cases it should be used when the facilities and personnel for good operative technique are lacking.

5. Cesarean section is advocated in rapidly advancing toxemias when proper facilities are available, and concomitant complications, obstetrical or general, may help to indicate this procedure.

6. Patients developing convulsions demand special attention to prevent self injury.

7. By the application of these principles we have been able to deliver two hundred and fourteen patients with eclamptogenic toxemia with no maternal mortality, and the total fetal mortality in cases with viable babies was 27%.

CARCINOMA OF THE RECTUM*

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In spite of the enormous amount of research that is being done throughout the world, little, if any, real progress has been made in the study of cancer. The very latest text-books on pathology in discussing the causes of this malady still mention the theories of Cohnheim, Ribbert, Thiersch and Waldeyer. But theorizing on "lost embryonic rests," on "inflammation" of these "rests" or on the loss of "physiologic restraint" of normal tissues on each other, does not add anything comprehensive to the causation of malignancy.

Pathology. According to Maud Slye, there are apparently two factors necessary for the production of carcinoma: first, the inherited

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susceptibility and, second, irritation or chronic stimulation or trauma fitted to induce it.[1] It is a recognized fact that this strangest and most lawless of vital phenomena has been initiated by tar, radium and the roentgen-ray. And, clinically, it may be noted that the organs which stand the brunt of physiologic insults are the ones in which carcinoma most commonly occurs —the stomach, the breast, the uterus, the intestines.

In the intestinal tract malignancy is not a rare occurrence. Jones[2] states that twelve per cent. of all carcinomata occur in this region and that sixty-five per cent. of these take growth in the rectum. In this region carcinomata are to be found as a rule at the junction of the rectum with the sigmoid, in the rectal ampulla or in the anal canal. The most common type is the adeno-carcinomatous growth derived from the cells of Lieberkuhn's follicles.[8] Of these there are three varieties of growth, papillomatous, the adenomatous and the colloid carcinoma. The ampullary tumors usually involve only a portion of the rectal wall though complete involvement is not rare. This is important to remember—that malignancy here remains local for a comparatively long time and that the lymphatic spread is relatively slow. This is of particular interest with reference to operability.

Metastasis. Metastasis, although a late manifestation, occurred in thirty-nine per cent. of Rankin's cases. Lymph gland involvement is the most frequent. Miles describes three paths of lymphatic drainage of the rectum:

1. The downward path—to the perineal skin, ischiorectal fat and to the external sphincter.

2. The lateral spread—to the posterior vaginal wall, the base of the bladder, the base of the broad ligament, the levators and to the glands.

3. The upward spread—to the peritoneal floor of the pelvis, pelvic mesocolon, paracolic lymph nodes, nodes at the bifurcation of the left common iliac artery.

Clinically, Miles reports finding metastasis to the inguinal glands in 27 per cent. of his cases, to the liver in 10 per cent., pelvic organs 9 per cent., retroperitoneal glands 6 per cent., lung 4 per cent., perineum 3 per cent. and to the femur in 2 per cent. of his cases.

Metastasis in general is not the mere discharge into the circulation of cells endowed with malignant properties. As a manifestation of malignancy it seems to be possessed of the same mysterious nature as the malignancy itself. It is a recognized fact that tissues differ in their liability to metastasis. Virchow long ago called attention to the interesting fact that the breast, the stomach, the uterus, while frequently the site of primary malignant growth are rarely the seat of metastasis. It is true that in the majority of cases metastasis can be explained on anatomical grounds. But what of those cases wherein anatomical considerations are out of the question? It is surely reasonable to assume that in many cases of malignancy cancer cells reach the heart, the spleen or the muscles. But how seldom do we find involvement of these structures! Are these unique and peculiar phenomena perhaps due to physical factors, such as the size of the tumor cell, the connective tissue relations, the number and size of blood vessels, or the contractile movement of organs? Or are they due to some special tissue predilection?

Symptoms. There is a tragic aspect to most cases of rectal carcinoma, and it is due to the fact that the diagnosis is usually made on late manifestations. The text-book picture of constipation, ribbon stools, progressive weakness, loss in weight, cachexia, metastasis—is the picture of a hopeless, pitiable case. If one is to serve his patient in the capacity common to the sincere, faithful and scientific medical man, he will have to make his diagnosis long before these late symptoms make their appearance. Earlier symptoms and of much greater importance are bloody stools, changed bowel habit and a mass in the rectum in at least seventy per cent. of the cases. This, the most vital of findings, is not as frequently looked for as its importance deserves. At the Mayo Clinic, twenty-six per cent. of their cases of rectal carcinoma had been operated on for hemorrhoids and in not one of these had a rectal examination been made! This inexcusable negligence is surely the cause for many of these cases reaching the hopeless stage.

A study of carcinoma of the rectum admitted to the Mount Sinai Hospital from 1921 to 1928 revealed seventeen undoubted cases. There were eleven females and six males. The ages varied from thirty-six to seventy-eight, the average age being over fifty-seven. In nine cases the diag-

nosis was arrived at through a rectal examination, either digital or proctoscopic. In the eight remaining cases the diagnosis was made by a roentgenologic examination. An interesting phase in this study was the analysis of the symptoms complained of by these patients. Seven complained of pain in the rectum, five were troubled with pain referred to the epigastric area, eight had bloody stools, seven suffered from constipation, one from constipation alternating with diarrhea, eight had lost considerable weight, six had lost their appetite completely and only one described a ribbon-like stool. No facts were brought out in relation to heredity. At the Montefiore Hospital, however, this factor seemed to have been of some importance. From 1914 to 1924 ninety-one cases of rectal carcinoma were admitted and in fourteen per cent. of these cases a definite history of carcinoma in the family was elicited.

Treatment. The essence of the treatment in these cases, as in other cases of malignancy, lies in the complete and widest removal of the tumor. According to Rankin, there are four factors which determine the operability of cancer of the rectum: 1, distant metastasis; 2, diffuse lymphatic involvement; 3, fixation of tumor to vital adjacent organs; 4, the pathologic classification of the growth according to Broder. Having decided, from a careful study of these four factors, that the patient can be operated on, it now becomes necessary to determine what type of operation is best suitable to the particular case. The operative procedure usually depends on the site and size of the tumor, the age of the patient and his general condition.

There are at least five types of operation for the removal of a rectal carcinoma. The ideal operation, of course, is the one-stage abdominoperineal procedure. But because of the delay in the diagnosis in the majority of cases such an operation is out of the question. In the majority of cases, therefore, the ideal procedure is a colostomy followed by a resection of the tumor. The colostomy in these cases is of inestimable value. It permits the patient to partake of solid, nutritious food thereby building up his vitality; it stops the irritation of the ulcerative tumor, thereby retarding its growth; and finally, it removes the possibility of an acute obstruction with its necessary emergency operation. Following the colostomy the patient is carefully and judiciously nursed for ten to fourteen days. The wide resection of the growth is then undertaken through the abdominoperineal procedure. Surgeons who are well versed in the treatment of carcinoma of the rectum, consider as ideal procedures a preliminary colostomy followed by the removal of the tumor with wide dissection of adjacent lymph nodes and invaded tissues.

CONCLUSIONS

1. Nothing new or definite has been added to the causative factors of cancer.
2. The most common form of rectal cancer is the adenocarcinomatous growth derived from Lieberkühn's follicles.
3. The symptoms of greatest diagnostic import are changed bowel habit, blood in the stool and a mass found on rectal or proctoscopic examination. A rectal examination should be made in every case where the stool shows evidence of bleeding.
4. The treatment of the vast majority of cases consists of a preliminary colostomy followed by a wide and extensive reaction of the tumor through the abdominoperineal route.

BIBLIOGRAPHY

1. Slye, M.: Nature of Cancer: Incidence and Inheritability, J. of Cancer Research, 11:135-215 (June) 1927.
2. Jones, S. F.: J. Missouri State Med. Assoc. XXIV, 1927.
3. Rankin, Fred W.: Colostomy and Posterior Resection for Carcinoma of the Rectum, J. A. M. A., 1966, (Dec.) 1927.

THE DETERMINATION OF PERMANENT DISABILITY FOLLOWING HEAD INJURIES*

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The subject of head injuries, even considered merely from the point of view of workmen's compensation, is entirely too broad to be covered properly in the limits of a paper such as this. Consequently it is desirable at the outset to define the scope and purpose of the present discussion.

In speaking here of head injuries, I am not referring to superficial scalp wounds and to those minor traumata which heal readily and which give rise only to a short period of temporary dis-

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ability; I have in mind those cases of greater severity, cases of skull fracture, cerebral contusion or concussion, etc, in which damage to the cranial contents may have been present, or is, at any rate, strongly to be suspected, and which may be, and very frequently are followed by a greater or less degree of permanent disability or functional inefficiency.

Such are the cases with which I am here concerned. And I wish to consider them from the point of view of the general surgeon, who is frequently called upon to examine them, weeks, months, or it may be, even years after the original injury, with a view to determining the presence or absence of permanent disability, and if the latter is present, its degree.

Difficulties of the Problem. The appreciation and estimation of the damage resulting from a ranial traumatism belongs in the category of the most difficult questions in the medical aspect of industrial accidents. That this is true is shown by a consideration of some of the elements entering into the problem.

In the first place, in many cases, the extent and variety of the knowledge which is indispensable for a proper examination from which sound conclusions may be drawn, make it almost impossible for any individual physician to be so equipped; the collaboration of a competent neurologist, an oculist, and an aurist is absolutely necessary. However, this is probably the least important phase of the problem, since such special services are readily available in every large city, and in most of the smaller ones.

A second and much greater element of difficulty appears when we recall the fact that many of the disabilities and disturbances complained of are largely, and not infrequently, entirely subjective in their origin. Among the commonest symptoms provoked by cerebral traumatisms, and the ones emphasized by the patients, are headaches, vertigo, disturbances of the psychic state, etc. An appreciation of the intensity of such symptoms is extremely difficult, since we have no means of measuring them; indeed, in many instances, especially among the milder cases, we have first to convince ourselves of the honesty and good faith of the patient in order to believe that symptoms are present. Under such circumstances, to make an approximately correct and satisfactory estimate of the functional disability resulting from these more or less speculative symptoms presents no easy task. To make such an estimate is hard enough when we have definite, concrete evidence of disability before our eyes, as in the case of an ankylosed joint, or a paralyzed extremity; how much more difficult the problem is, when the evidence from which conclusions are to be drawn is more or less intangible in nature, will be readily apparent. Furthermore, every individual reacts differently to any departure from his normal state. It is undoubtedly true that pain, for example a headache, may be sufficiently severe to prevent all work; on the other hand, it is equally true that a headache which would completely incapacitate one man, might occasion only lowered efficiency in another, due entirely to their different individual reactions. This fact also has to be taken into consideration in every case.

A third element giving rise to difficulty in the examination of patients suffering from the late results of head injuries is due to the fact that many of the symptoms induced by a cerebral traumatism may be manifested intermittently, or even only at rare intervals; however, in spite of this, they may be none the less serious. When such is the case, in spite of the best faith on the part of the patient, and in spite of repeated examinations on the part of the physician, the latter may be unable to obtain sufficient information upon which to base a judgment satisfactory to himself. For example, the claimant may be subject to paroxysms of Jacksonian epilepsy, or he may suffer from attacks of vertigo which occasionally reach sufficient intensity to cause him to fall; since this may happen under any circumstances, in the street, in the shop near moving machinery, in fact, anywhere, the prospect of a serious secondary accident is never very remote; but since the attacks recur at irregular intervals, and may come on at any hour of the day or night, it is extremely unlikely that the examiner will be able to establish their occurrence to his own satisfaction. He is forced to form his conclusions from the history as obtained from the patient, his family and his friends. Such testimony is almost always prejudiced, and is, moreover, unreliable, since it usually comes from poor and untrained observers. Under these circumstances, the only thing which can be done, is to insist that the

claimant enter a hospital for observation, and that he remain there for a length of time sufficient to establish or disprove his claim.

Another fact which must never be lost sight of in the examination of these patients is that many of the prominent symptoms produced by cerebral traumatism, such as headache, vertigo, and deafness, may be the result of pathological processes entirely independent of any injury, for example, otitis media, mastoiditis, infection of the accessory sinuses, etc. Every effort must be made to rule out these conditions, either old or recent, as a factor.

It must also not be forgotten that cerebral lesions sometimes exhibit a latent period of months, or even years. A patient may consider himself completely cured following an injury to the head; after a varying, but usually prolonged interval, symptoms of epilepsy, dementia, or other cerebral disturbance not ordinarily associated with traumatism may appear. At autopsy, at the exact site of the old injury, a patch of thickened dura, an old abscess, a cyst, an exostosis may be discovered. Such cases are fortunately rare, but have been recorded not once, but many times. I know of no instance in which a claim for compensation has been made under such circumstances; nevertheless, the possibility is there.

Finally, it must be remembered that malingering is always to be suspected. Of course this is true to a certain extent in all cases following injury, especially those in which there is a prospect of compensation, but I believe that it is especially so following head injuries. Headache, vertigo, deafness, loss of memory, dimness of vision, mental depression, all may be readily simulated, and great difficulty may be encountered in proving such simulation. It might be thought that in this connection the history of the patient previous to his accident would be of great value, but such is actually not the case. Such a history will necessarily be obtained from the patient's relatives and close friends, who are usually far from disinterested. From them it will probably be learned that formerly he never had an ache nor a pain, that his sight and hearing were extraordinarily keen, that his intelligence was much above the average, etc. Consequently, the entire burden of proving malingering rests upon the examiner, or better, examiners. On the other hand, a true psychoneurosis may be present, which must be carefully differentiated from simulation.

From the preceding observations, it is apparent that patients suffering from the after-results of head injuries often present the greatest problems; problems which at times appear almost insoluble. Such being the case, the surgeon should not hesitate to repeat and prolong his examinations to his complete satisfaction, and when, as very frequently happens, assistance in special fields is demanded, he should not hesitate to obtain such assistance.

Clinical Aspects of Head Injuries. From the clinical standpoint, a variety of classifications of head injuries for purposes of study and description is possible. For my purpose, a classification based in general upon symptomatology is sufficient.

In the first place, two groups are immediately apparent, in one or the other of which the great majority of patients belong. The first group comprises those cases in which all symptoms are diffuse, permitting no exact localization of the site of the lesion; the second group is made up of those which present definite localizing signs and symptoms. Strictly speaking, cases presenting epileptic manifestations belong in this second group, but on account of their surgical importance have been placed in a third group.

In addition to these cases just mentioned, there are certain others, comparatively few in number, in which the sequelae are late in making their appearance, being preceded by a latent period of varying duration, without, however, for this reason being less serious. And finally, there are cases which present a mild symptomatology in the beginning, followed gradually by late serious manifestations.

Summing up, then, we have five clinical forms to consider:

1. Cases with diffuse, non-localizing symptoms.
2. Cases with localizing symptoms.
3. Cases with epileptic manifestations, either local or general.
4. Latent cases.
5. Cases with late aggravation.

In spite of this formidable array of possibilities, it should not be forgotten that complete cure, without sequels, is common.

Practically all of the cases in the first group present the "common subjective syndrome" described by Pierre Marie in 1916. As is evident from the name, the symptoms complained of are purely subjective. The principal ones are headache, attacks of dizziness, not amounting to true vertigo, accompanied by visual disturbances, and various indefinite nervous symptoms.

Headache is probably the symptom of which complaint is most commonly made. It may be violent and continuous, or it may be present only intermittently. Usually its location is more or less vague, although sometimes, the exact spot may be fixed very definitely, under which circumstance the symptom assumes some localizing value. Frequently, tenderness upon palpation may be complained of over the whole side of the head upon which the injury was received. The pain may be variously described as a sensation of weight, as of a band about the head, as a pounding, etc. It is increased by effort, fatigue, jarring, noise, heat, cold, sudden movements of the head, bending over, and other causes.

The majority of patients complain of dizziness. This is not constantly present, but comes on at irregular intervals, particularly during effort, or while bending over. It is not a true vertigo, being of a much milder degree; the patients do not stagger, and they do not fall, although many of them state that they feel as though they were about to. The attacks are often accompanied by transient blindness, or a sensation as of flashes of light before the eyes.

With this headache and dizziness are very often associated complaints of indefinite psychic disturbance: hebetude may be present, or there may be noted changes in disposition, emotional instability, insomnia, impaired memory, physical laziness, etc.

With all this, the general physical health is usually excellent: nutrition is good, appetite and digestion are unimpaired, the various functions show no change. The cerebrospinal fluid frequently shows increased tension, and contains increased amounts of albumin and sugar. This may be the only objective finding, as will be mentioned later.

The symptoms characterizing the cases in this group have been discussed somewhat in detail because they make up the picture which is encountered by far the most frequently in compensation surgery. Simulation and exaggerations are also most common here, and are always difficult to discover and rule out.

The other clinical forms mentioned above may be considered briefly.

The cases making up the second group, those characterized by localizing symptoms, present disturbances of various kinds. There may be motor troubles manifested by monoplegia, hemiplegia, or paraplegia, by paralyses of single nerves, such as the facial, or paralyses of the area supplied by a single nerve trunk, such as the ulnar or median. It should be remembered that cerebral paralyses are practically always crossed; occasionally, however, homolateral paralyses may be observed: such cases are probably the result of *contre-coup*. There may be disturbances of sensation, of coordination, cerebellar vertigo, etc. In the examination of cases of this group, the services of a trained neurologist are absolutely indispensable.

In the third group belong those cases with epileptic manifestations. Among 1316 cases of head injury in civil life, reported by various authors, some form of epilepsy as a late manifestation appeared in 62, or 4.7 per cent.

The epilepsy may be general or local. In certain cases, a craniocerebral injury is undoubtedly capable of producing generalized epilepsy, analogous in every way to the so-called idiopathic form. Careful differentiation is extremely necessary here in order to be sure that such cases are not manifestations of a post-traumatic hysteria; on the other hand, it may be that the epileptic attacks preceded the trauma which is alleged to be their source. These generalized attacks have very little, if any, localizing value.

The opposite is true of the Jacksonian type. These attacks may have a pure motor, a pure sensory, or a paralytic form; they affect exclusively a certain portion of the body, particularly the extremities; they localize the seat but not the nature of the lesion in the opposite cerebral hemisphere.

In this group, also, belong those cases presenting the so-called epileptic equivalents: for example, slight temporary unconsciousness, attacks of vomiting, transitory pains or areas of anesthesia, aphasia of short duration, temporary absence of mind, etc.

In the cases of the fourth group there is a latent period, varying from months to sometimes years, in which symptoms, if present, are so slight as to be disregarded by the patient, and no evidence of disturbance is discoverable upon careful examination. Later definite evidence of trouble appears.

In the fifth group belong those cases presenting in the beginning mild and apparently benign symptoms; these persist with no apparent change for an indefinite period, and suddenly, without apparent cause, take on a much more serious character; epilepsy, meningitis, mental troubles, etc., may appear.

Examination of Patient. Turning now to the examination of the patient, it should be clear, from what has preceded, that such an examination, to be complete, must include a careful history, a general physical examination, special examinations by the neurologist and by the ophthalmologist and aurist, a radiograph and a lumbar puncture. Fortunately, as was said before, in civil life, the majority of patients with cranial injuries completely recover, especially if we take into account those cases of slight concussion, etc., which often never enter the hospital. Such cases, also, are practically never followed by serious sequelae. Consequently, it happens very frequently that special examinations are clearly unnecessary, and may be entirely dispensed with; where there is the slightest doubt, however, they should be employed.

A clear history in this class of cases is of the highest importance. It may seem superfluous to mention this, but it is deserving of special emphasis. The patient should be questioned carefully as to the exact circumstances of his original injury, whether there was a loss of consciousness or not, and its duration, if present. Were there paralysis of any portion of the body, or disturbances of bladder or rectum? How long was he confined to bed, and what treatment was employed? If this treatment was surgical, efforts should be made to determine the details, if possible. The entire progress of the case from the time of injury to the date of the examination should be thoroughly covered. Finally, the present symptoms of which the patient complains should be elicited very carefully; in a large number of cases they will be found to be very similar, as has been stated.

A complete history having been obtained, a thorough general physical examination should next be made. Particularly the site of the alleged injury should be gone over very carefully. Any scars present should be observed, and the condition of the underlying bone investigated. If there is a loss of osseous tissue, the shape and size of the bony defect should be accurately noted; it should be observed whether or not the pulsations of the brain are visible, and whether there is an impulse on coughing or other effort. During the course of this examination, the condition of the ordinary flexes will have been ascertained, any gross muscle atrophies, weaknesses, or paralyses will have been discovered, together with any decided alterations in sensation. From the results of this examination, it can now be readily decided in most cases as to whether further special examinations are indicated or not. Very frequently, as was said above, it will be found that they are entirely unnecessary; however, for purposes of emphasis, let it be repeated, in cases of the slightest doubt, the patient should be examined by specialists.

A detailed discussion of the neurologic examination is outside the scope of this paper. It is sufficient to say that it should include an investigation of any motor disturbances, the condition of both superficial and deep reflexes, disturbances of sensation, of coordination and equilibrium (indicating cerebellar lesions), of the gait, and of speech.

The ophthalmic examination should determine the condition of the extrinsic muscle of the eye, the characters of the pupil and its reflexes; it includes testing of the visual acuity, and measuring the field of vision, concluding with the ophthalmoscope.

By means of the otologic examination, any alterations in the character of the hearing are tested: the various labyrinth tests, which often have a definite localizing value for a deep lesion, are also made.

A radiographic film of the cranium may give information of the greatest value: thus, a splintering or depression of the inner table may sometimes be clearly demonstrated, occasionally an abscess, tumor, or cyst; on the other hand, it may show nothing abnormal whatever. Under such circumstances, little reliance is to be placed upon the results of x-ray examination, particu-

larly if definite focal symptoms are present. In my opinion skiagraphs of the head are of little value in any case unless they are stereoscopic; it is also necessary, especially in doubtful cases, to take several films at different angles in order to be fairly certain.

Valuable information may also not infrequently be obtained from an examination of the cerebro-spinal fluid. I am perfectly aware of the fact that considerable difference of opinion exists as to the safety or desirability of lumbar puncture in cases of head injury; objections to the employment of the procedure, based on its danger in such cases, apply only to recent injuries, and in the class of cases which I am here considering, it is perfectly safe. Examinations for sugar and albumin should be made, and the fluid examined microscopically; above all, the pressure should be determined carefully, and it may be, at various intervals. In making this determination, the manometer should be employed, as in this way only can slight changes in pressure be ascertained. It has been shown by Quincke that increased pressure of the cerebrospinal fluid may persist for months and even years after an injury to the brain. Such increase may be slight, but it is important for the reason that occasionally it may furnish the only objective evidence in favor of a material foundation for the subjective disturbances compained of.

From all this, it is very evident that a complete and thorough examination of a patient who has had an injury to the head may be a very complex procedure, laborious and time-consuming; fortunately, those who require so much are fewer in number, especially in civil practice.

Estimation of Disability. In conclusion, a few remarks upon the estimation of disability may be added. The examination having been completed, and the fact determined that some sort of disability is present, to what degree does this affect the claimant's earning capacity, expressed in terms of percentage? It is scarcely necessary to say that any opinion will always be more or less arbitrary, since there is no standard by which we can measure the functional capacity of an individual in relation to his work. But for the purposes of workmen's compensation, the question must be answered to the best of our ability. The figures which follows seem to me to be fair.

In the first category are cases with loss of bony substance, without any symptoms whatever, which cases, moreover, are rare in civil life. Actual disability may not be present, but it is conceivable that they are more vulnerable to future injury; and aside from this, are entitled to some compensation: in such cases, I would say that the permanent disability should be rated between 5 and 30 per cent, depending upon the size of the osseous defect.

Next are the cases which form the large majority of all claimants: those in which the common subjective syndrome above mentioned is present. This syndrome may vary from mild to severe in its manifestations. In the cases usually seen, having more or less frequent headaches, transient attacks of dizziness, and possible slight hebetude or indifference, I would place the minimum disability at 5 per cent, the maximum at 20 per cent, with the average falling in the neighborhood of ten per cent. In the more severe types, with more or less constant and severe headache, true vertigo, and pronounced psychic changes, the disability may range from twenty to fifty per cent; and finally some cases in this class may present symptoms of such extreme grade as to amount to complete disability, or 100 per cent. These are very rare, however.

When dealing with epilepsy, it must be established beyond doubt in the first place that it is of traumatic origin. Such being the case, the disability in the generalized form may vary from 10 per cent to 100 per cent, depending upon the frequency and severity of the attacks. In the localized form, if surgery offers no prospect of relief or cure, and again depending upon the frequency of attacks, and also upon the part affected, the percentage of disability varies between a minimum of 25 and a maximum of 75 per cent.

Various local paralyses should be estimated in terms of the parts affected, such as hand, arm, leg, etc.

SUMMARY

The estimation of permanent disability following head injuries presents an extremely difficult problem.

It is difficult because the examination is frequently a highly technical one, because the dis-

abilities and symptoms complained of are largely subjective, frequently intermittent, and sometimes latent, and because malingering is often present and hard to rule out.

Under such circumstances, the collaboration of a surgeon, a neurologist, and an oculist and aurist is imperative.

For estimating disability, cases of head injury may be considered under five different clinical forms. One of these forms, comprising those cases presenting diffuse, non-localizing symptoms, is the one which is encountered by far the most frequently.

A complete examination should include a careful history, a general physical examination, a special neurological, ophthalmological and aural examination when indicated, a radiograph, and a lumbar puncture.

Estimates of permanent disability are suggested.

THE INTERPRETATION OF A DOUBTFUL WASSERMANN REACTION*

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To recognize disease, largely, through its history and symptomatology, is an art of which future medicine must needs take cognizance, if she be hopeful of realizing her present ambition of detecting that disease before it becomes characterized by gross anatomical alteration. The latent and obscure forms of syphilis, with their indefinite history, their ambiguous symptoms and physical findings and their ill-defined Wassermann reactions, present only vague evidences of physiologic dysfunction, the etiology of which is difficult to fix.

In a study of patients known to have had syphilis, Moore[1] found 72 whose spinal fluid exhibited some slight evidences of abnormality, although the Wassermann reaction, done on both the blood and spinal fluid, was negative. Being free from symptoms and physical findings indicative of lues, he styles them asymptomatic neurosyphilitics. Using other groups as premises, he argues, through further study, to the conclusion that these are potential neurosyphilitics, who if treated at this stage almost never develop full blown tabes or paresis. His convincing work stands as an unconscious explanation of why, as Fordyce[2] says, "the older statistics—failed to recognize a large group of cases with indefinite nervous and mental symptoms, often diagnosed as neurasthenia with nervous breakdown which existed for years before definite degeneration stigmata developed."

The Wassermann reaction today has served to interpret many such nervous breakdowns as syphilis but still falls far short in detecting by itself all syphilitics. The earnest efforts of Kolmer[3] Duke[4] and others in developing modifications that might give us a test of maximum efficiency with a minimum of error, have led to refinements broadening its field of usefulness. Their work stands as an implied exception to Craig,[5] who would have us interpret slight reactions as negative, in the presence of a negative history and slightly suspicious symptoms.

While the significance of a strongly positive Wassermann reaction is beyond dispute and the status of a negative reaction has been accepted as being of value only in a negative way[6] there remain the intermediate reactions, the significance of which has yet to be elucidated. In attempting to obtain an estimate of the value of the least positive reactions, a study has been made of the history, symptoms and physical findings of patients presenting + and ± Wassermann reactions together with the effect of treatment. This has been done with a view of showing that, given their proper weight in the scale of importance, such reactions may be of inestimable service in determining etiology.

Method of Study. In explanation of the manner of approach it is to be said that no case was considered that gave a frank history of having had syphilis, except where it was used as a basis of comparison; in which the reaction was used as a check upon treatment; in which, regardless of the indefiniteness of the blood Wassermann, the spinal fluid gave indisputable evidences of syphilis; in which, regardless of the serological findings, the diagnosis of syphilis was evident from the physical findings.

In the following, as will be seen, reference is made only to ambiguous symptoms and findings which might be interpreted as being the result

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*From the clinical laboratory and medical department of St. Mary of Nazareth Hospital.

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of syphilis. Those symptoms and physical findings with a manifest etiology, although they may occur also in the vague and indefinite forms of syphilis, are omitted e. g. nervousness associated with hyperthyroidism, neuritis due to acute infections, diabetes and so forth.

The following points were considered as evidence suggestive of syphilis and constitute the basis for the statistical table. Under family history were considered: the presence of syphilis in the marital partner or parents; miscarriages and premature births; insanity; cerebro-vascular lesions; nervous breakdowns; cranial nerve palsies; neuritis and "rheumatism"; pelvic operations necessitated by the presence of veneral infection. Under personal history were considered: genital sores and infections; neuritis and "rheumatism"; nervous breakdowns; depressions and fears; "lumps" and ulcers "dissolved with medicine"; taking of iodides with subsequent improvement; rectal strictures and ulcerations; ulcerating mouth lesions and so forth.

Under symptoms were considered: constricting pains which might indicate a radiculitis; mental symptoms, loss of memory, inability to concentrate, mental depressions, irritability, nervousness, insomnia, vertigo, tinnitus, headaches, bladder weakness, sexual impotency, numbness, formication, diplopia, awkwardness.

Under physical findings were considered: pupillary irregularities, variation in size and shape, inequalities, impaired light reaction, absent, sluggish or exaggerated tendon reflexes, septal erosions, tonsillar ulcerations, adenopathy, idiopathic anemia, scars and so forth.

In the technique of the reaction we adhered to the more or less conventional method using .1 c. c. of serum, 2 units of complement and 5 to 10 units of antigen (the anti-complementary unit being at least eight times that of the antigenic) with a primary water bath incubation of one hour. The hemolytic system consisted of a 2.5% suspension of sheep cells sensitized with a 4 unit dose of amboceptor. Three antigens were used consisting of an alcoholic extract of beef heart; an acetone insoluble and a cholesterinized (after the method of Kolmer). Interpretation was as follows: A reaction was read + when hemolysis was almost complete with all antigens, and ± when hemolysis was almost complete with two antigens and complete with the third. Re-checking with serum subsequently obtained was not done often enough to be of statistical value, although, where done, the result obtained corresponded closely with those obtained with the first serum.

We are willing to concede that, had the quantitative method of Kolmer been used and spinal fluid examinations made on each patient, the scope of this paper would have been considerably narrowed making the study more critical. However we feel some justification in presenting it as representing what can be done in the way of determining the probable presence of syphilis where the demands of an impatient and intractable public preclude any exhaustive or even systematic study.

Analysis of Cases. The italics that mark the heading of each group express a summary of the evidence, based upon what have been considered prerequisites for the diagnosis of syphilis. These prerequisites are, suggestive history, symptoms, physical findings, a + or ± Wassermann reaction and response to anti-syphilitic treatment. At least three of these prerequisites were considered necessary for a diagnosis of syphilis. Response to treatment, being a test of the correctness of the assumption, was given additional weight.

Out of 181 patients whose sera yielded a Wassermann reaction reading + or ± 28 were considered unsuited for this study on the basis of findings previously discussed, while upon 87 no data were obtainable. The remaining 66 were divided as follows:

Group 1. *In which the preponderance of evidence warranted a probable diagnosis or syphilis.* In this series, introduced for the sake of comparison there were 8 patients all of whom gave a positive history of syphilis. In 7 cases either the symptoms or physical findings and in 6 both the symptoms and findings, might have been interpreted as being due to syphilis. In one patient having lightning leg pains and slightly irregular pupils the blood Wassermann was negative and the spinal fluid Wassermann +. Another patient with an aortitis and associated myocarditis showed no measurable improvement under treatment. Still another with an iritis, optic neuritis and sluggish patellar reflexes showed but slight improvement. In all, however, there were present at least two of the pre-

requisites in addition to some fixation of complement.

Group 2. *In which the preponderance of evidence warranted a presumptive diagnosis of syphilis.* It is this group, with its vague but suggestive evidences of syphilis, that exemplifies what is understood by the clinical manifestations of pathological physiology, the presence of which must be considered the forerunner of morphological tissue changes. The fact, that all presented some fixation of complement, that all presented at least two additional prerequisites and that all responded to antiluetic treatment warranted the assumption that the basis for the symptoms and physical findings was syphilis. There were in this group 22 patients, in 20 of whom the symptoms, in 17 of whom the physical findings, and in 12 of whom both the symptoms and physical findings, might have been interpreted as due to syphilis. One patient with a loss of memory, arterial thickening, uncertainty of gait and absent patellar reflexes gave a negative blood Wassermann and a ± spinal fluid Wassermann along with a suggestive luetic curve with colloidal gold. He improved markedly under treatment. Another had had seven operations for abdominal pain. She likewise improved under treatment. Of the 2 presenting but slight improvement, one was a child with chorea, enlarged spleen, retarded development and general adenopathy whose parents were both luetic. The other, whose husband was luetic, presented a hypertension and cardiac symptoms associated with an aneurysmal dilatation of the aorta.

The following case histories exemplify the type of cases used in this study:

Mrs. A.—Husband syphilitic. For one year, off and on, had symptoms resembling gall gladder disease with decided tenderness over the gall bladder area. Her blood Wassermann was ±. Dietary management for six months was without benefit. Following a course of anti-luetic treatment she has been free from symptoms for three years.

Miss B, aged 32 years, was suffering from chronic sinusitis, a slight secondary anemia, underweight, constipation and a mildly active apical tuberculosis. Despite the fact that these conditions were corrected there was no striking improvement. Father came under observation one year later suffering from dizziness, tinnitus, hypertension and a ++ blood Wassermann. A blood Wassermann was then done on the daughter with a ± result. Under anti-leutic treatment she gained seven pounds in two months and showed marked amelioration of her symptoms.

Miss C, aged 34 years, suffered from nervousness, constricting pains, melancholia and exaggerated patellar reflexes. Blood and spinal fluid Wassermann was ± with an atypical leutic curve with colloidal gold. Marked improvement under anti-leutic treatment.

Group 3. *In which the preponderance of evidence warranted a doubtful diagnosis of syphilis.* This group, which comprised 6 cases, while conforming in general to group 2, is considered separately because none of these patients responded to treatment. The one patient with a positive history of syphilis had a cerebral thrombosis. One complained of deafness, loss of memory, transitory weakness of the right arm and leg with anisocoria. Another was a patient of eighty years, with arterio-sclerosis and sluggish pupillary and patellar response. Hence 3 patients presented vascular lesions, which even if luetic might not yield to anti-luetic treatment. But, in the light of what we have considered prerequisites for a diagnosis, the preponderance of evidence must be considered as unfavorable for the diagnosis of syphilis.

Group 4. *In which, in the absence of treatment, the diagnosis was unwarranted.* In this group of ten cases, the data pertaining to them, as will be seen from the table, corresponded closely to that of the preceding group. In the 2 patients with a positive history the rest of the findings parallel those of the cases described in group 1.

Group 5. *In which the preponderance of evidence was against the diagnosis of syphilis.* This series of 20 cases is inserted as proof that a + or ± Wassermann may occur in conditions decidedly non-syphilitic in character and emphasizes what was stated earlier, that such reactions are of value only when given their proper weight in the scale of importance. In almost all instances the test was done with a view of ruling out syphilis. Only one patient gave a positive history. The symptoms of intermittent attacks of abdominal pain, nausea and vomiting, which occurred in this case, disappeared upon correcting an existing colitis. In view of the fact that the symptoms and physical findings present could be explained upon the basis of the existing pathology, no account was taken of suggestive family or personal history. Two patients, one suffering from pernicious anemia, the other

with a brain tumor, received anti-luetic treatment without benefit. One patient suffering from cerebral apoplexy was classed as "undetermined," because the underlying vascular lesion might have been syphilitic. Among the others there were two patients with a carcinoma of the esophagus, one suffering from a liver abscess, another from encephalitis lethargica, another from a sarcoma of the inguinal nodes. These illustrate the nature of the diseases in which a + or ± Wassermann reaction was found. Of course some of these patients, in addition, may have been syphilitic, but the preponderance of evidence as here investigated was against such an assumption.

CONCLUSION

From the above study, by comparing and contrasting the different groups one must arrive at the conviction that a + or ± Wassermann reaction may not be regarded as inconsequential. It is a symptom of dominant importance which, where found, needs carefully to be correlated with the history, subjective symptoms and physical findings. And when, after discriminating investigation, these remain inexplicable on the basis of the existing pathology or are without a recognizable etiology; and when further they are such as might occur with a luetic infection, such reactions, reasonably, may be presumed to indicate the presence of syphilis. When added to this there is an amelioration of symptoms with anti-luetic treatment, the presumption assumes a high degree of probability.

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STATISTICAL ANALYSIS OF 66 CASES STUDIED

Groups—	I	II	III	IV	V
Number of Cases	8	22	6	10	20
History Positive	8	0	1	2	1
History Suggestive	..	12	3	6	..
Symptoms Suggestive	7	20	6	7	..
Physical Findings Suggestive	7	17	4	4	..
Sympts. & Phys. Finds. Suggest.	6	12	2	4	..
Wasserman +	3	10	2	5	8
Wasserman ±	4	10	4	5	12
Blood Wasser. Neg. Sp. Fl. Posit.	1	2	0	0	0
Number Cases Treated	8	22	6	0	2
Improvement A. None	1	0	6	..	0
Improvement B. Slight	1	4	0	..	0
Improvement C. Marked	6	18	0	..	0
Evidence Favoring Syphilis	8	22	2	5	0
Evidence Against Syphilis	0	0	3	3	19
Evidence Undetermined	0	0	1	2	1

By "history positive" is understood that the patient had full knowledge that he at one time was syphilitic, whereas "history suggestive" means that the possible presence of syphilis was inferred.

Under "symptoms" and physical findings are enumerated the number of times either or both were present, reference being made to only those symptoms and findings that might be interpreted as due to syphilis.

REFERENCES

1. Moore, Joseph E.: Studies in Asmyptomatic Neurosyphilis. Johns Hopkins Hosp. Bull. Vol. 33, p. 231 (July, 1922).
2. Fordyce, John: Neurosyphilis. J. A. M. A., Vol. 71, pp. 1023-1028 (September 28, 1918).
3. Kolner, John A.: Amer. Jour. Syph., Vol. 3 (1919) to Vol. 6 (1922).
4. Duke, Wm. W.: Interpretation of the Wassermann Reaction. Craig. Inter. Med., Vol. 30, pp. 531-547 (Nov., 1922).
5. Craig, Charles F.: The Wassermann Test, ed. 2. St. Louis, C. V. Mosby, p. 192.
6. Kilduffe, Robert: The Status of the Negative Wassermann. J. A. M. A., Vol. 79, pp. 2215-2217 (Dec. 30, 1922).

THE ETIOLOGY AND TREATMENT OF THE NEUROSES*

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The purpose of this paper is to trace the development of the psychogenic theory of the neuroses and to discuss briefly the treatment of functional nervous disorders. By the term psychogenic is meant the influence of the past experiences of the individual in determining the symptomatology of the nervous condition. The psychogenic basis of the symptoms in all mental disorders, whether functional or organic in origin, will also be pointed out.

When the cause of nervous conditions was first looked for by medical men many years ago they naturally turned to the study of the nervous system. The search for defects of the nervous system as the basis of the symptomatology of "nervous" and mental disorders was influenced by the then current theories of the localization of function in various parts of the brain. If, as was at one time supposed, mental phenomena such as emotion, intelligence, perseveration, and so on, resided in precise portions of the brain, it was logical that the brain be studied in order to discover the lesions occurring in these patients. The work of these investigators produced but little data relevant to the explanation of nervous disorders, except for the important

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contributions to the understanding of the brain pathology in the organic psychoses. This failure in productive research of the worker who attempted to account for nervous disorders in terms of brain pathology and the realization that particular mental phenomena are not definitely localized in precise portions of the brain caused most of the investigators to turn their attention to other problems of the nervous patient.

Following this period of research in the field of brain pathology the attention of investigators turned to the study of bodily disturbances. It was found, for example, that the neurotic individual is rather weak physically, and it was assumed by many medical men that nervous patients suffer from some disease process which undermines the general health and nutrition and secondarily causes the nervous symptoms. The study of various bodily functions came into further vogue with the development of physiological chemistry and laboratory methods. Sporadic attempts were made to relate causally disturbances of various physiological functions to the symptoms of the nervous individual. The blood sugar content, for example, was reported to be increased in nervous and mentally disturbed patients. Other bodily defects were ascribed as the cause of nervousness, such as heart and kidney defects, malnutrition, primary weakness of the visceral and somatic musculature, and so on. These theories, however, were founded upon an inadequate study of few individuals, and were soon dispelled by a more careful investigation of these bodily functions. It was found, for example, that the blood sugar content is not distinctly different in the nervous patient. In regard to muscular weakness and disturbances in the viscera, it was shown that these findings were secondary to the primary nervous condition, that is, the neurotic individual, because of his anxieties and worries, does not pay proper attention to his physical condition, and as a result develops constipation, digestive disturbances, and so on.

One of the most prevalent theories which existed at the beginning of the twentieth century, and which still finds some support among a few medical men maintained that one of the most important causes of nervousness and of many insanities is an intestinal autointoxication. The findings of an enlarged lower bowel with intestinal stasis are cited as proof of this theory. Temporary cure, and in exceptional cases permanent recovery, following the removal of various parts of the large bowel has been cited as additional proof of the assumption that intestinal stasis and intoxication are the cause of nervous conditions. It is not necessary to enumerate all of the facts which are directly contradictory to this theory, of which there are many, but it is important to mention two factors which make this theory quite doubtful. First, experimental work has failed to produce definite evidence as to the presence of intoxicants in the blood stream of the nervous patient. Second, a temporary recovery in some cases adds but little proof to the validity of this theory of the causal condition. It has been shown that a group of nervous patients may recover when each individual is treated by a distinctly different method. Now, if the proof of a theory were to be based upon the treatment in individual cases there would be dozens of theories, all of which would be similarly valid. Furthermore, many patients are temporarily cured because of having been under some form of treatment, and in the case of the resection of the bowels the shock of the operation may temporarily reorganize the mental functions. This theory of the causal relationship of intestinal intoxication to the neuroses and psychoses may very well be reversed with much greater proof in the opposite direction. It is a commonly known fact that the sympathetic nervous system, for example, functions prominently in such emotional states as anxiety and worry and as a result exerts an inhibitory effect upon the activity of the intestinal tract. This inhibition of the intestinal tract accounts for the stasis and enlargement of the gut in many nervous patients.

Recent theories of the causes of nervous disorders have frequently dealt with hereditary factors, and the assumption has been made that the nervous individual develops his symptoms because of defects due to hereditary causes. The problem of the differentiation between inborn and acquired mental characteristics is still in a very unsettled state, from both the purely psychological and medical standpoints. Most of the experimental work upon this problem has led to greater confusion rather than to a clarification of the issues involved. However, experimental

psychology has, within the past ten or fifteen years, contributed a great deal of data which indicate clearly that the generally accepted doctrines regarding the instincts must be radically modified. The experimental psychologists have shown that probably the human individual inherits little that can be called instinct and that various behavior characteristics which are ordinarily supposed to be instinctive are in reality acquired during the first few years of life. The term "instinct" is at any rate misleading since it is not explanatory and does not take into account the possible factors of environmental influence. The frequent attempts by a few medical men to explain the symptoms of most nervous conditions in terms of the unequal development of the instincts or in terms of the neurotic's nervous system being "long or short" in one direction or another are certainly due to the lack of psychological information. It is not the purpose of this paper to discount hereditary factors as possible causes of the development of the neuroses and the psychoses, but it must be emphasized that an exhaustive study of the environmental factors must be made in all cases before heredity may be ascribed as the etiological factor.

The attempt of some psychiatrists, in recent years, to formulate the doctrine of "constitutional make-up" of various types as an explanation for the development of nervous disorders is but another effort causally to relate the symptomatology to some hereditary defect. These theories sound attractive at first, but they cannot be accepted before further factual data are produced to substantiate their claims. Diagnoses such as "constitutional inferiority" and "psychopathic personality," which are often made by psychiatrists who believe in the theory of "constitutional make-up," are quite worthless in that they fail to imply any adequate explanation of the etiological factors.

The presence of a nervous disorder in the immediate family of the patient is one of the most frequent causes of the failure of the physician to differentiate between hereditary and acquired characteristics. One is often content to accept the hereditary basis of a nervous condition when the parents of the patient present similar symptoms, and the important factors of imitation, training, and the direct taking over of the parents' habits by the patient are overlooked. The following cas is briefly described as a typical example of the direct environmental influence in the development of a neurosis.

G. N. is a boy twelve years of age who was brought for examination by the mother because of "nervousness." The specific symptoms were restlessness, frequent loss of temper, a great many fears, inability to sleep at night, and a poor appetite. The boy was said to be afraid of going to sleep at night for fear that burglars might enter the house. The boy was in the seventh grade at school, and doing good work. He had few playmates, preferring to spend his spare time in reading. The examination of this boy showed him to be well developed with no physical defects. Mental tests showed him to be of normal intelligence. Psychiatric examination gave no definite clues as to the cause of his fears, except for his statement that his father was also afraid of burglars entering the store. The mother was questioned and she stated that the father was also nervous. When the examiner talked with the father the problem became much clearer. The father was a highly neurotic individual who had been under treatment for the past year because of "nervousness." He stated that he often became weak, was very restless, and was constantly demanding attention from his wife and the boy. He also had a great fear of robbery, and insisted on either the wife or the boy staying with him in the store after dark. The boy was not treated psychiatrically, but the father's attending physician reported, after a period of about six months, that the father was greatly improved. Although the boy was not given any treatment, he was reported to be practically normal.

This case illustrates the development of neurotic behavior in a boy, the symptoms corresponding very closely to those of the father. With the improvement of the father the boy also showed improvement. The boy simply took over the attitude about him, and the symptoms disappeared with the improvement of the environmental situation.

More important than the direct environmental training in the development of the neuroses is the development of conflicts, especially when they are repressed. The symptoms as a result of the repression of these conflicts serve as a method, usually not developed with any conscious purpose, by which the individual explains his behavior or compensates for frustrated desires. Conflict from the psychiatric standpoint implies a situation involving incompatible motives so that the individual finds it difficult to carry out his desired activities.

In order to illustrate the role of conflicts in the development of neurotic behavior I shall cite the case of B, a woman 35 years of age,

who came to the clinic because of a partial paralysis of the right arm. This patient gave a history of two former attacks, about six and nine months previously. These attacks came on rather suddenly just as she was arising in the morning, and a recovery took place within about a week. The physical examination showed no findings which could account for the paralysis on the basis of any disturbance in the nervous system. The blood pressure was within normal limits, the heart action good, the arteries not sclerosed. The neurological examination of the paralyzed arm showed the condition to be that of an hysterical paralysis. The arm showed a flaccid paralysis, but the patient was able to move the shoulder muscles. In addition there was absolute anesthesia of the forearm and hand. There was also an anesthesia of the cornea and of the pharynx.

The etiology of the symptoms in this case was as follows. The patient's husband was a traveling salesman who left her alone for a considerable part of the year. They had no children, and she had few friends, so that she practically lived alone. The patient did not want her husband to keep the position he held, and yet she did not want to interfere with his business career. She did not want to admit even to herself that she was selfish enough to want her husband to remain at home, and she repressed these wishes so that finally she was not fully aware of them. Then came the solution of her conflicts by means of the paralysis of the arm which brought her husband home. By means of the paralysis she attained her desire, and yet did not feel that she was directly responsible for it. Further questioning brought out the information that the previous attack of paralysis took place just after the husband left for an extended trip, and on both occasions she immediately telegraphed him to come home. The treatment in this case took the form of a careful explanation of the reasons for the paralysis, and a complete recovery took place within a few days. The situation was satisfactorily solved when the husband decided to accept an office position with the firm, giving up his traveling.

Although the case just cited illustrates the method often employed in solving a serious conflict, the greatest number of patients do not solve their problems even in such an unsatisfactory manner as did this patient. Most of the neurotic patients feel constantly worried, and grieve over supposed trifles. The conflicts and the outwardly apparent worries become fixated upon some object, usually in the immediate environment. The nearest object of great importance is the patient himself, and as a result a great number of bodily symptoms are developed. There may be headaches, or palpitating heart, or weakness, and so on. The patient, when questioned about his worries or difficulties, often answers quite honestly that he has none, for, it is important to note, he has repressed them, that is, he has driven them from his direct awareness.

The symptoms of the purely neurotic individual are due either to the taking over of the habits of other individuals in the immediate environment or are developed as a method of solving the difficulties which the patient cannot solve consciously. Although it is true that we all have conflicts, most of our conflicts do not involve major motives and do not interfere with our every-day activities. Also, many individuals are able to solve their difficulties, often to their complete satisfaction, and at other times with certain compromises. The individual who neither solves his difficulties directly nor compromises between the opposing motives develops com pensatory behavior by which he either explains his difficulties or justifies his behavior, or relegates his mental difficulties to the background.

In the study of the insanities, where the symptoms are more definite than in the neuroses, modern psychiatrists have turned to the explanation of the disease in terms of conflicts, environmental difficulties, and so on. Even in those insanities which are due to a physical condition, such as general paresis, the symptoms are not the same or even similar in all patients. The basis of the symptoms again lies in the past experiences and difficulties. The following histories of two men suffering from fairly advanced general paresis may illustrate the direct relationship of the environment of the development of the specific symptomatology.

M, thirty-seven years of age, during examination was very affable, cooperative and quite talkative. He stated that he felt fine, and before the examiner could continue the examination, interrupted to tell of his great wealth. He maintained that he owned twenty hotels and a hundred thousand houses in Chicago,

offering the examiner a hotel and a hundred thousand dollars. His stream of talk always included a discussion of wealth, and he managed persistently to turn the conversation in the direction of his possession of an immense sum of money. In brief, the social history showed him to be a laborer earning only a small wage; for years he had had difficulty in providing for his family, which included four children.

A, an Austrian, had been in America for about fifteen years. He was not talkative, but became greatly excited when displeased by anything in the hospital. When asked about money, he answered very promptly that he had very little, that he owned only a small delicatessen store, and that he was in debt for the store. asked about the possibility of his becoming rich later, he shrugged his shoulders and stated that it was a doubtful possibility. When asked about his accomplishments he at once became very garrulous, stated that he had written hundreds of songs of the best kind, that these songs were being broadcasted from all the stations of the world, and that they were being played every night in all of the cafes of Vienna. The history stated that this man was of an intellectual type, attended the opera and concerts, and had himself dabbled in music for a time, learning to play the piano rather well.

These two cases illustrate, first, that the mental symptoms may vary widely in different individuals in whom it is known that there is a similar and definite physical condition; second, the symptoms depend upon the past experience of the individual; and third, the symptoms developed are a means of attaining an end which in ordinary life could not have been reached. Just as the neurotic individual may develop a paralysis of the arm or get a severe headache which results in a solution, even though temporary, of his immediate difficulties, so the psychotic individual develops symptoms which are a solution of his past difficulties and desires. The neurotic person differs from the psychotic only in that the latter has lost all notion of the difference between real and imaginary conditions of life, and has no insight into the possibility of his behavior being assumed.

In the two cases just cited, the physical disturbance was the irritating condition of the disease, but did not determine the mental manifestations. Similarly, in the neurotic individual, although physical defects may be present, these defects are not the determinants of the nervous condition. It is true that irritation from any source may aggravate and prolong a neurosis, but it is important to consider the organic condition not as the sole cause of the neurosis. The analysis of the etiological factors is rarely complete when a physical defect is found, and an investigation of the conflict and environmental difficulties should be made in all cases.

In the treatment of the neurotic individual it is important, first of all, to consider the patient seriously. This does not mean that the patient should be made to feel that his symptoms are important, but he should be listened to attentively. The statement is often made that the symptoms of a neurotic individual are imaginary, and the physician often tells the patient that he is imagining everything. Nothing can be further from the truth. The patient really has a headache, or does feel nervous, or really believes that he has a paralysis of the arm. Were one to reason that the patient imagines his symptoms one would be driven to say that every person imagines the ideas he believes in.

It is evident that the investigation of the conflicts of the individual is of prime importance. Direct questioning, however, may not reveal the nature of these conflicts, as the individual may not be aware of his real difficulties, or he may be loath to speak of them. In all cases it is profitable to make an objective investigation of the social, economic, vocational and family situation. Often a careful history regarding these factors, taken from individuals other than the patient, will reveal information indicative of the true nature of the difficulty. Freud, who has done a great deal in the direction of a rational explanation of the neuroses, lays great stress upon the sexual life of the patient. He maintains that most of the symptoms of the neuroses are due either to suppressed desires or worries about sexual matters. That this factor is important is evident, for example, from the large number of cases in which the symptoms may be traced directly to worries over masturbation. The nature of the conflict may often be successfully revealed by the use of objective tests which have been developed by psychologists. Such tests as the Kent-Rosanoff association or the Pressy Scale of Emotions may often indicate the true nature of the conflict when direct questioning or social investigation fail.

A readjustment of the environmental situation is often indicated in the treatment of the neurotic patient. For example, removal from a voca-

tion to which the patient is unsuited may be helpful, or reeducation of the attitudes of the other members of the family towards the patient may facilitate the treatment. Removal of the patient from the home is often necessary when the other members of the family interfere with the treatment, but such a procedure should not be carried out at the instance of the patient only.

Surgical and medical treatment must, of course, be instituted when indicated; drugs, such as sedatives, should be utilized only as temporary measures. There is always a danger, however, in the use of medication in that it tends to give the patient the impression that he is suffering from some organic disease. In all cases the specific treatment is that of giving the patient a careful and detailed explanation of the nature of and the reasons for his conflicts, and of helping him to solve his difficulties.

PLACEBOES

"Please, now, honey just one more."

"No."

"Why not? Don't hold off just to be mean."

"No."

"It means so much to me, dearest. Please now, just one more and then I'll promise——"

"No."

"Most girls would be flattered to death to have me urging them like this—know that?"

Still she shakes her head.

"Don't you want me to even like you any more?"

"Ye-es."

"Well, then, you might be a little more agreeable about such a small matter, dear."

"No."

"Come one, now, be a good sport, dear. Just shut your eyes——"

"No."

"Open those red lips just a tiny bit——"

"No."

Silly, isn't it? But after all, he was only trying to get that last spoonful of cereal inside his little daughter.—*Master Painter and Decorator.*

The city kid was roaming about in the country when he came upon a dozen or so empty condensed milk cans. Greatly excited, he yelled to his companions: "Hey, fellers, come here quick! I've found a cow's nest!"

English Clergyman—"And when you arrive in London, my dear lady, don't fail to see St. Paul's and Westminster Abbey."

Fair American—"You bet, I'll rattle those off sure, but what I've been hankering to see ever since I was knee-high to a grasshopper is the Church of England."

Society Proceedings

CHRISTIAN COUNTY

On the evening of Thursday, July 19, the Christian County Medical Society met in semi-annual session at the Country Club of Taylorville, where those who enjoyed the sport played golf in the afternoon and dinner was served at 6:30 with 25 guests at the table. Several others came in later to hear the addresses of the evening.

Dr. Carl Black of Jacksonville and Dr. Frank P. Norbury of the same city were with us and each gave us a splendid address which brought out a fine discussion. Dr. Norbury spoke first and his subject was: "Early signs and Symptoms of Mental Disorder." After some revision this paper will be published in the JOURNAL as a part of the program of this meeting.

Dr. Carl Black's topic was "Evolution in Diagnostic Methods," in which he brought out certain methods of arriving at the diagnosis, and along with this he diverged a little to mention the trend of medical practice towards State medicine—or otherwise, as we make it.

Each paper was enjoyed by about thirty members and visitors from other cities. Among the visitors were Drs. Neece and Archbold of Decatur and Newcomb of Jacksonville.

Dr. Miller of Assumption was elected to membership and two others were elected by transfer.

In going over the records of this society for the history the state is getting out, the secretary has been much gratified to see the excellent programs that have been so consant in this society and to note the general progress of the society through the most trying times of its existence. D. D. BARR, *Secretary.*

Marriages

EDWIN F. CONDON, Rock Island, Ill., to Miss Mary Ursula Showalter of Davenport, Iowa, July 18.

NICOLA V. EMANUELE to Miss Catherine Salerno, both of Chicago, July 8.

BERNARD P. MULLEN, Chicago, to Miss Helen Winifred Marr of Racine, Wis., June 30.

MILO H. TROVILLION to Miss Minnie Smith, both of Metropolis, Ill., June 29.

Personals

Dr. and Mrs. W. W. Greaves, LaSalle, Ill., sailed Aug. 4 for 6 weeks' visit to England and France.

Dr. Otto L. Schmidt has resigned as a member of the school board of Chicago.

The University of Wales recently awarded the honorary degree of LL.D. to Dr. Franklin H. Martin.

Dr. Julia C. Strawn was recently made president of the Medical Women's Club of Chicago and Dr. Ione F. Beem, president-elect.

Dr. Clarence W. Hopkins, chief surgeon, Chicago and Northwestern Railway, gave a public lecture on "Health and Efficiency" at Springfield, July 12.

Dr. Francis L. Lederer has been appointed assistant professor of laryngology, rhinology and otology at the University of Illinois College of Medicine on half time.

Edwin O. Jordan, Ph.D., professor of bacteriology and chairman, department of hygiene and bacteriology, University of Chicago, has been appointed Cutter lecturer on preventive medicine at Harvard University for the year 1928-1929.

Dr. Ira W. Ellis, Murphysboro, was the guest of honor at a testimonial dinner given by the local physicians, August 8; Dr. Ellis has been in practice about forty-five years, thirty-nine of which have been spent in Murphysboro.

A joint meeting of the Macoupin County Medical Society and the Rotary Club of Staunton was held, July 24, in honor of Dr. David L. Bley, who has practiced medicine about fifty-three years. Among the speakers at the luncheon was Dr. Charles H. Nielson, St. Louis, and his subject, "Fifty Years of Medicine." Dr. Bley's father, two brothers and their sons have all been physicians.

Dr. Andrew M. Harvey of LaGrange, chief physician and surgeon medical department of the Crane Company, Chicago, was honored, June 12, by election as president of Knox College Alumni Association from which he was graduated in the class of 1889.

News Notes

—The Adams County Medical Society is arranging for one of the most important and outstanding medical meetings of the year to be held at Quincy, Illinois, on October 15.

Seven leading professors from Northwestern University Medical School of Chicago are coming to Quincy to put on a program of exceptional interest to the general practitioner. There will be papers on obstetrics, fractures, heart disease, and infections of the hand.

The professors who will appear on the program are Doctor Joseph B. DeLee, Professor of Obstetrics; Doctor Irving Samuel Cutter, Dean and Associate Professor of Medicine; Doctor Allen Buckner Kanavel, Professor of Surgery; Doctor James Gray Carr, Associate Professor of Surgery; Doctor William Roberts Cubbins, Associate Professor of Surgery; Doctor Harry Edgar Mock, Assistant Professor of Surgery.

The meeting will begin promptly at nine o'clock, Monday morning, October 15, and will continue throughout the day. A special luncheon will be served at noon and a banquet will be given in the evening.

The Adams County Medical Society have had these all-day clinical meetings for several years at which time outstanding physicians and surgeons of the country have been brought to Quincy to present subjects of interest to the specialist and the general practitioner.

—The Chicago Council of Medical Women has a fund which it uses to assist women medical students to complete their medical education.

—The Schuyler County Medical Society invited the Adams County society to meet with them at Rushville, August 23, when, following an afternoon of golf, there was a dinner and a scientific program.

—The cost of "Cancer Day" in Quincy, May 1, held under the auspices of the Adams County Medical Society, was $440, all of which was contributed by physicians, except a contribution of $75 by the city health department. The three largest items of expense were advertising in the local paper, rental for the theater, and printing.

—No other state with a 1920 population of four million or more has reported an average annual death rate as low as that in Illinois during the last seven years, according to the Illinois State Department of Health. The average annual death rate in Illinois from 1921 to 1927 inclusive was 11.4; of Ohio, 11.5; of Michigan, 11.7; of Massachusetts and Pennsylvania, each 12.4; of New York, 12.8, and of California, 13.8.

—The hospitals to be erected by Northwestern University Medical School on the McKinlock Campus, East Chicago Avenue near the lake, includes the 200 bed Passavant Hospital, which is under construction at Superior Street and

Fairbanks Court; a 300 bed general hospital south of the medical school building and facing the Passavant Hospital; a 125 bed children's memorial hospital directly east of the Passavant Hospital, and a 200 bed maternity hospital on Superior Street east of the children's hospital.

—A picnic will be held at the Old Salem Chautauqua grounds, Petersburg, September 12, a special feature of which will be an address on surgery by Dr. George W. Crile, Cleveland, and an address on medicine by Dr. John Phillips of Cleveland. All members of the Illinois State Medical Society and their friends are invited. "Come spend the day and visit the former home of Abraham Lincoln." Dinner will be served by a Springfield caterer regardless of weather, as there is a large pavilion. Send reservations to Dr. John R. Neal, Springfield, chairman, committee of arrangements.

—At a meeting, August 2, a committee considered the present status of work on vaccination against tuberculosis with the Bacillus Calmette-Guérin, and especially the application of this method of vaccination to the general public by the Chicago Municipal Tuberculosis Sanitarium, where this organism has been studied by animal experimentation for about one year. The committee comprised Drs. Ludvig Hektoen, professor and head of the department of pathology, Rush Medical College; David J. Davis, dean of the University of Illinois School of Medicine; Julius H. Hess, professor of pediatrics, University of Illinois School of Medicine; Henry C. Sweany, medical director, Municipal Tuberculosis Sanitarium; Elsa Lagergren, of the Göteborg (Sweden) Children's Tuberculosis Hospital, temporarily on duty at the Chicago Municipal Tuberculosis Sanitarium, and Benjamin Goldberg, secretary, board of directors of the sanitarium. The conclusions of the committee were to the effect that the Bacillus Calmette-Guérin does not tend to stability as far as its virulence is concerned, some strains becoming virulent to the extent that animals inoculated die as a result of the inoculation, and that results reported thus far from the use of oral inoculations with this organism do not seem to be conclusive evidence that protection can be secured. The committee was of the opinion that the method must be regarded as in the experimental stage, and therefore not suitable at this time for widespread application to human beings, either through oral administration or into the tissues directly. It seems proper, the committee reports, since years are required to determine the value of a process of this type, to await the results of the use of this vaccine in other communities where it has been on trial a number of years, and to continue at the Chicago Municipal Tuberculosis Sanitarium only animal experimentation and carefully supervised limited human inoculations.

—A report issued by the Illinois Association of Criminal Justice in cooperation with the Chicago Crime Commission, August 11, indicates that, with one exception, the present staff of coroner's physicians in Cook County is incompetent to perform properly the important medicolegal duties which pertain to the office. The report states that not one of the physicians appointed by the present coroner has shown any tangible indication of being interested in any real sense in medicolegal work. No member of the staff of the present coroner holds a position as a hospital pathologist, and only one holds a teaching position in a medical school and that in the department of internal medicine. An examination of present records of the coroner's office disclosed, the report continues, not a single record of a thorough and complete necropsy performed according to accepted standard methods. The present records are considered practically worthless, therefore, in establishing the cause of death for any purpose and of doubtful value as the basis for evidence in criminal trials. The work of the only physician on the coronor's staff, who was appointed by a former coroner, was commended. The other members of the medical staff are so untrained for medicolegal work as to be in great contrast to the experienced pathologists who assisted the previous coroner, five of whom were engaged in teaching pathology in medical schools, and whose interest in medicolegal work was indicated by the fact that they published fourteen scientific papers on medicolegal subjects. Some of these skilled pathologists had been on the former coroner's staff for many years, but when the present coroner took office they were discharged or forced to resign. Experience indicates, the report says, that, in the hands of a competent, energetic and progressive coroner, the office of coroner with modernized modifications can meet fairly the needs of the

population it serves. The essential requirement, however, is that the coroner's physicians be appointed on a professionally expert rather than on a political basis.

Deaths

ROY W. BARTHOLOMEW, Evanston, Ill.: Chicago Homeopathic Medical College, 1900; member of the Illinois State Medical Society; aged 51; died, July 6, at the Evanston Hospital, of heart disease, following pneumonia.

EUGENE GREGORY CLANCY, Chicago; Rush Medical College, Chicago, 1903; a Fellow, A. M. A.; served during the World War; aged 51; on the staff of the Frances E. Willard Hospital, where he died, August 1, of coronary thrombosis and edema.

WILLIAM H. DAVIS, Fairfield, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1879; member of the Illinois State Medical Society; aged 77; died, July 9, at the Olney (Ill.) Sanitarium, of cerebral hemorrhage.

BENJAMIN EDELSTEIN ELLIOTT, Chicago; Northwestern University, Medical School, Chicago, 1910; a Fellow, A. M. A.; associate professor of obstetrics, Loyola University School of Medicine; served during the World War; aged 41; on the staffs of the Misericordia Hospital and the Mercy Hospital, where he died, August 2, of embolism.

JOHN EDWARD FAIRCHILD, Maywood, Ill.; University of Illinois College of Medicine, Chicago, 1926; a Fellow, A. M. A.; aged 30; died, June 25, at the Municipal Tuberculosis Sanitarium, Chicago, of pulmonary tuberculosis.

EDWARD L. HILL, Jacksonville, Ill.; Medical Department of Washington University, St. Louis, 1895; a Fellow, A. M. A.; managing officer of the Illinois State Hospital; aged 58; died, July 12, of general arteriosclerosis and cerebral hemorrhage.

LOUIS BURTON JOLLEY, North Chicago, Ill.; Hahnemann Medical College and Hospital, Chicago, 1905; a Fellow, A. M. A.; formerly mayor of North Chicago; on the staff of the Victory Memorial Hospital, Waukegan; aged 50; died, August 1, at Torch Lake, Mich., of carcinoma of the pleura.

HARRY KAHN, Chicago; Northwestern University Medical School, Chicago, 1898; member of the Illinois State Medical Society and the American Academy of Ophthalmology and Oto-Laryngology; formerly instructor in pharmacology, clinical ophthalmology and otology at his alma mater; attending oto-laryngologist to the Michael Reese Hospital; aged 59; died, July 17, at the North Shore Health Resort, Winnetka, Ill., of cerebral hemorrhage and hemiplegia.

JACOB A. KRUMRINE, Chicago; University of Pennsylvania School of Medicine, Philadelphia, 1867; aged 86; died, July 31, of arteriosclerosis and gangrene of both feet.

MERRITT E. LANGSTON, Peoria, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1887; member of the Illinois State Medical Society; aged 57; was found dead in bed, June 28, probably of mitral insufficiency.

DANIEL LICHY, Rockford, Ill.; Chicago Medical College, 1871; a Fellow, A. M. A.; past president of the Winnebago County Medical Society; Civil War veteran; for many years member and at one time president of the board of education of Rockford; formerly president of the board of trustees of the Rockford Municipal Sanitarium; aged 83; on the staff of the Rockford Hospital, where he died, July 23, as the result of injuries received in an automobile accident.

MILTON S. MARCY, Peoria, Ill.; Chicago Medical College, 1878; member of the Illinois State Medical Society; aged 73; died, July 21, of heart disease and nephritis.

LEWIS CURTIS MESSNER, Potomac, Ill.; Rush Medical College, Chicago, 1872; for many years bank president; aged 83; died, July 22, of paralysis.

ALLEN K. MOSELY, Grandview, Ill. (licensed, Illinois, 1878); Civil War veteran; aged 83; died, June 29, in a hospital at Paris.

JAY ALBERT POTTER, Lombard, Ill.; State University of Iowa College of Medicine, Iowa City, 1890; aged 67; died, in July, at the Elmhurst (Ill.) Hospital, of injuries received when his automobile was struck by a train.

WILLIAM H. SCOTT, Dallas City, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1885; member of the Illinois State Medical Society; aged 70; died, July 11, of cerebral hemorrhage.

EDWIN MARVIN SHELDON, Ashton, Ill.; Medical Department of the University of the City of New York, 1879; aged 70; was found dead, July 25, of heart disease.

LUTHER PECK WALBRIDGE, Decatur, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1884; Bellevue Hospital Medical College, New York, 1888; aged 72; died, July 15, of heart disease.

FRANK J. WELCH, Bloomington, Ill.; Medical College of Ohio, Cincinnati, 1883; member of the Illinois State Medical Society; aged 68; died, July 7, at Morrow, Ohio, of angina pectoris.

ALEXANDER C. WIENER, Chicago; University of Leipzig, Germany, 1886; a Fellow, A. M. A.; on the staff of the West Side Hospital; aged 67; died, June 11, of carcinoma of the liver.

BENJAMIN E. LE MASTER, Bushnell, Ill.; College of Physicians and Surgeons, Chicago, 1904; formerly on staff of Holmes and St. Francis hospitals, Macomb; served in World War; received gold medal from Queen of Roumania for services as Red Cross surgeon; died suddenly from cerebral hemorrhage while operating in Bacon Clinic at Macomb, May 24.

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